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See pages 19, 20, 129, 131 for catalogs and publications on municipal and civic subjects

For Index to Advertisements see page 148

IN SERVICE 39 YEARS *and still going strong!*

Here's proof of dependability and long life. The above meter was sold to the City of Columbia in 1898. It was recently cleaned and reinstalled.

W. E. TOMLINSON
CITY ENGINEER

CITY OF COLUMBIA
OFFICE OF CITY ENGINEER
COLUMBIA, SOUTH CAROLINA

H. O'B. BELLINGER
ASST. ENGINEER

June 19, 1937.

Pittsburgh Equitable Meter Co.,
400 Lexington Ave.,
Pittsburgh, Pa.

Gentlemen:

Water Plant.

On June 15th, 1937, our Meter and Service Department removed one of your meters bearing the Serial No. 11786. Records show that this meter has been in continuous service about 38 years with no repairs except a new clock or register.

Will you please check your records and see if this meter was installed in 1898 or in 1899. We are trying to establish the exact date that Columbia began metering its services.

Any information that you can give us about this meter, or if you can give us the exact date you sold the City of Columbia the first meter would be appreciated.

Yours truly,

Guy H. White

Guy H. White,
Columbia Water Plant.

PITTSBURGH EQUITABLE METER CO.
MERCO NORDSTROM VALVE CO.
MAIN OFFICES PITTSBURGH, PA.

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COLUMBIA	KANSAS CITY	CHICAGO	PHILADELPHIA	ATLANTA	OAKLAND

PITTSBURGH WATER METERS

The Future of Relief Expenditures

WPA Program for 1938

SIGNIFICANT paragraphs from addresses delivered by Corrington Gill, Assistant Administrator of the Works Progress Administration, before the annual conference of the Municipal Finance Officers' Association, in Boston on September 16, and at a conference of New England Mayors, in the same city, on September 17:

AT THE FINANCE OFFICERS' MEETING

ENCOURAGING as are the hopes of continued business recovery, it would be folly on my part, it would be folly on your part, to look forward to anything like the complete disappearance of the unemployment problem, and, with it, the disappearance of the unemployment relief problem. Nobody likes to be a pessimistic prophet, but if we are to judge by the experience of foreign countries, particularly England, if we are to draw any conclusions from an analysis of the underlying causes of our present unemployment, we must expect a permanent unemployment of between 4 and 5 million, as well as a relief load equivalent to somewhat more than half of this figure. Even to reach this condition presupposes the success of the governmental program aiming at industrial stabilization and the mitigation of the effects of the trend towards the displacement of men by machinery which was so greatly accelerated during the depression. It also presupposes the continuance of the present scale of meeting relief needs, which has proved its efficacy in fighting unemployment by distributing purchasing power where it is most needed, and where it will be immediately spent. . . .

Of course there are the false economy advocates who would have the Federal Government abandon its work program and spread its funds on direct relief, thereby reducing the cost to the states and localities. Their position, it seems to me, is a good deal like that of a child crying because he lost his penny and then continuing to cry when a benevolent passer-by gives him another penny —because he might have had two pennies. Without a Federal work program stimulating recovery through the distribution of large blocks of purchasing power, the relief load would not have been reduced in the past four years to the extent that it has been reduced; and the states and localities not only would not have been able to save legitimately on their share of relief costs, but would not have had the benefits of the earlier and fuller recovery made possible by the work program, nor the permanent improvements which the workers created through the work program.

The same reasoning applies to the future. A work program is essential if business recovery is to be maintained, if business is not to be allowed to stagnate as a result of the loss of purchasing power from a mass of unemployment two or three times as great as in the 1920's. Other countries have their armament programs which stimulate employment but at the cost of lowering the standard of living. We must rely on programs of socially useful work, which provide employment and raise the standards by creative additions to our social wealth and services. . . .

In the last analysis, the status of local finance depends upon the condition of general economic activity and the amount of social wealth and income being produced. At the present stage of our development, the amount of social wealth and income being produced is closely related to the social expenditures of the Government. Since these expenditures help to broaden and maintain an ascending prosperity, the burdens of municipal finance necessarily become lighter as municipal finance is able to draw upon a larger reservoir of social wealth and income. Adequate expenditure, therefore, for social betterment is an indispensable guarantee for the continuance of municipal financial recovery.

FROM MR. GILL'S ADDRESS TO THE NEW ENGLAND MAYORS

THE activities under the Works Progress Administration have not only benefited the cities through the work performed; they have kept skills and morale alive in the destitute jobless who would otherwise have sunk into complete despair. And they have lifted a tremendous relief burden that would otherwise have had to be borne by the cities alone.

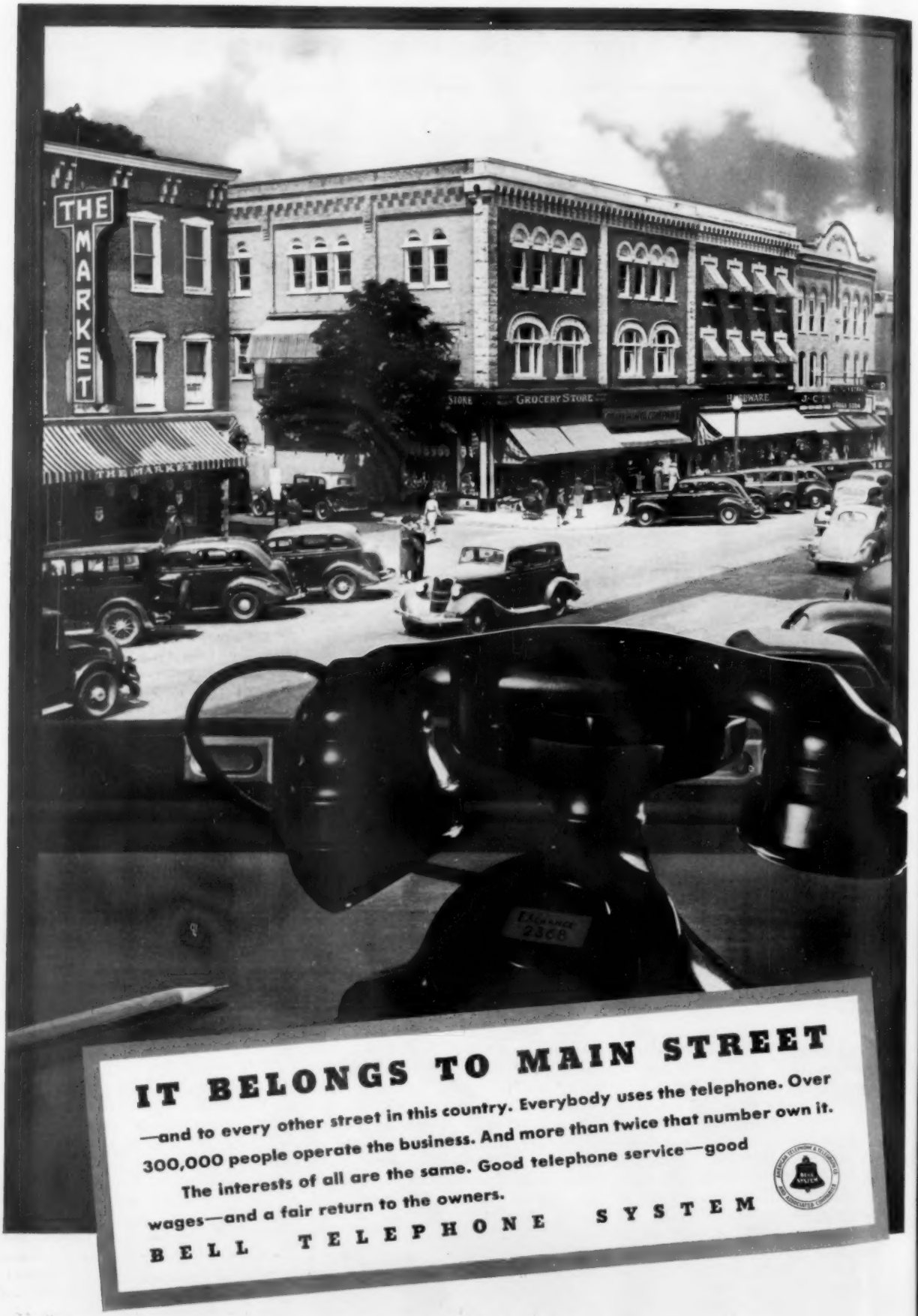
Under the WPA program for the first half of 1938 it is anticipated that the same types of benefits will flow to municipalities. The size of the program, of course, will be smaller than in previous years. Present Federal funds for relief and work relief are drawn from an appropriation of $1,500,000,000 made by Congress. In line with an express provision of the Appropriation Act, it is now our duty to make these funds stretch through June, 1938. We have no other choice. Congress has ordered that the billion-and-a-half appropriation, together with such unexpended balances from previous appropriations as the President may allocate for the purpose, must be so administered as to last through the fiscal year.

Because of this fact, we are making every effort to plan our program so that most of these funds will flow directly to the man on the job. We have trimmed administrative expenses to the bone. It will be your job, more than ever before in the past, therefore, to finance a larger share of the non-labor costs of the projects. It is especially the heavy construction projects that will require your fullest financial cooperation, since this type of project bears the highest non-labor costs. . . .

Some of the $1,500,000,000 appropriation will be allotted, of course, for projects already applied for and given WPA approval. The 1937 Act provides that approximately $415,000,000 may be spent for projects on highways, roads, and streets. For projects such as public buildings, parks, public utilities, rural power systems, sewerage systems, water works, airports and other transportation facilities, flood control and similar conservation work, $630,000,000 is available. Most of these undertakings, you will note, are particularly applicable to cities—for there the bulk of unemployment still exists. Furthermore, "white-collar" projects and women's projects are provided for with approximately $380,000,000, and the National Youth Administration may receive about $75,000,000. The funds available for any of these categories of projects may be further increased by adding the unexpended balances from earlier relief appropriations, or by transferring from other classes up to 15 per cent of the class limitation.

I may add that the WPA will not receive all of the billion and a half appropriated by Congress. The 1937 Act provides that the appropriation is also to be available for expenditure by the Resettlement Administration for such loans, relief, and rural rehabilitation for needy persons as the President may determine. It is too early to say how large a sum will be used for these purposes.

With certain relatively minor exceptions, however, the WPA program during the coming year is not expected to differ greatly from the program which has been in effect. The types of acceptable projects and the manner of carrying them out will remain about the same. In order to insure that all projects be carried through to successful conclusion, the Act provides that no non-Federal project may be undertaken unless the sponsor signs a written agreement to finance such part of the entire cost as is not to be supplied from Federal funds. (*See also page* 133.)



IT BELONGS TO MAIN STREET

—and to every other street in this country. Everybody uses the telephone. Over 300,000 people operate the business. And more than twice that number own it.

The interests of all are the same. Good telephone service—good wages—and a fair return to the owners.

BELL TELEPHONE SYSTEM

Our Municipal Notebook

Tell It to the Machines

THE very niggardliness with which some departments may be treated frequently compels these departments to adopt methods which will permit them to complete their work despite the deficiencies. This may explain why the relief, welfare and poor departments of both the cities and the counties lead in the use of dictating equipment.

An outstanding example, of course, is the case of the New York City Emergency Relief Bureau, which has purchased $214,000 worth of dictating machines with which to equip its 45 offices. Here was a vast volume of work to be done, which would require either an endless amount of wasteful hand-written reports or a slue of stenographers. The result was the purchase of 537 Ediphone and 321 Dictaphone dictating instruments and transcribing machines.

This particular installation is sensational in size; but the use of dictating equipment is just a routine matter of placing them wherever there is a need for economical and always-available facilities for dictating letters, reports, bulletins and specifications.

In a representative group of 50 cities, dictating machines are used by 17 welfare and relief departments, 12 courts, 9 mayors. They are also used in 23 other departments, including police, fire, finance, parks, public works, water and light.

Public Support for Modern Transportation

WINNING public support is as fascinating to municipal officials as it is to the city-transportation executives who heard William L. Day, Vice-President of J. Walter Thompson Co., say that "there is no power at the disposal of the upper classes which will support an unjust or unfriendly attitude toward the public." Everyone wants public approval; but how is it gained? Says Mr. Day:

"A good business executive in charge of a retail store with plenty of competition seems to have a very different attitude toward the problem of public opinion than does the executive of a monopolistic public-service corporation. . . . If business is really friendly to the little man and little woman; if business cares for their opinion and respect, then business can have them. . . . A dime's worth of honest friendship for the public will call down a blessing from the same public on the much-desired dollar of profits."

That is the first step toward successful modern city transportation—a desire to be friendly with the riding public and with municipal officials who represent the public. A next step might be a municipal effort to cooperate with the company.

Paint!

EVERYBODY uses paint, but very few know the difference between one mix and another, except that there are foundation paints and finishing paints, flat and glossy. And, despite the universal use of paint, a glance in almost any direction will reveal that not anywhere enough of it is used.

This is true even of the municipal governments which buy millions of dollars worth per year. New York City's 1937 purchases included 232 tons of white lead, 24 tons red lead, 20,800 gallons of linseed oil, 7,650 gallons of turpentine.

The most obvious painting needs of any city are the fire hydrants, refuse receptacles, playground and park equipment, electric-light poles, parking-meter and traffic standards, fire-boxes, traffic markings, road machinery, motor vehicles, including those operated by the transportation companies. Then come the buildings, both trim and interiors. In addition to 49,000 trucks owned by municipalities, there are 3,900 sewage-treatment plants; most cities own a water works; and a thousand of them have electric plants. The Spirit of Rust hovers over the machinery and construction involved in these utilities. Paint is the antidote.

Paint costs money, but not as much as ruined machinery and the psychological effect of the appearance of ruin and neglect.

Lighter Lubricating Oils

THE trend is toward lighter lubricating oils because motors are designed to consume much less oil than formerly. Accordingly, it becomes an economic waste to use heavy oils, inasmuch as the small saving in consumption is offset by a large reduction in the gasoline mileage. The situation is that where a passenger car used a 40 oil it now uses a 30, and where a truck used 50 and 60, modern trucks now use a 40.

Water on Electric and Gasoline Fires

THE march of progress in the design of safety appliances is illustrated by a new double-vapor nozzle announced by the Akron Brass Co. It will be recalled that it was an Akron vapor nozzle which extinguished in 50 seconds a serious electric fire which had been fought for hours and had darkened the city of Newark, N. J., and shut down all electric-power service for 5½ hours on December 28 last.

Fire Commissioner John Keenan says today of that fire: "History was made that day in fire-fighting circles in the use by the Newark Fire Department of the vapor nozzle on a fire of such magnitude as that at the Public Service plant at Point No Point."

At that time, less than a year ago, Newark owned six of these nozzles. There are now fourteen of them—one on each of the twelve ladder trucks, one on the rescue squad car, and one at the training academy. Commissioner Keenan says that these nozzles have recently proved effective on an electric-locomotive fire in the Poinier Yards of the Pennsylvania Railroad at the end of South Broad Street, and in extinguishing open gasoline fires such as might occur if a tank truck tipped over.

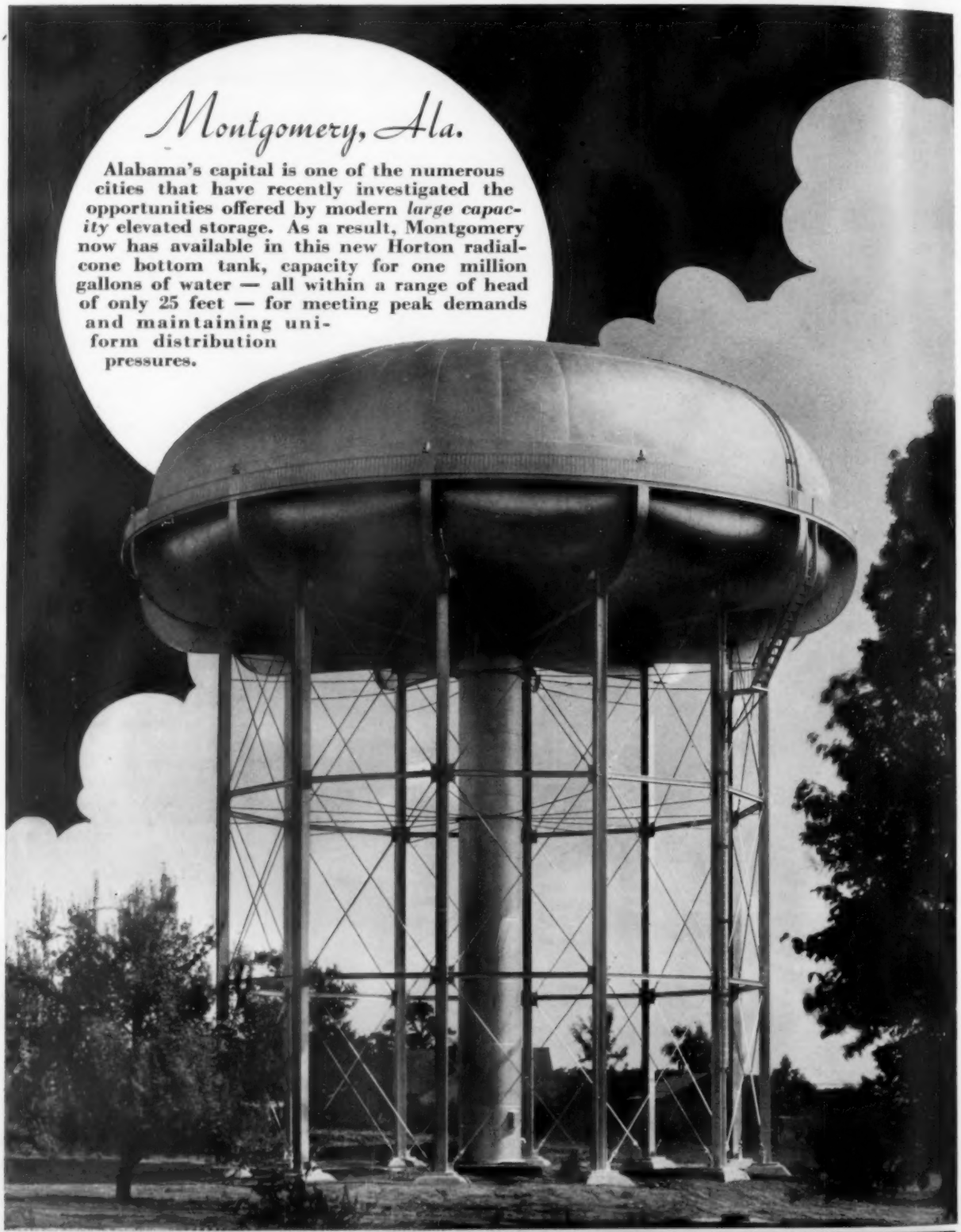
Equipment Cost vs. Losses

WHILE fire losses are by no means a true measure of fire damage, they are the only figures which do give an indication of the toll of fires. The accompanying tabulation shows for 15 cities the per capita investment in fire equipment and the per capita fire loss averaged for the five years 1931-35:

	Per Capita Overall		
	Value Equipment	Fire Loss	Class (Nat'l Board)
Buffalo	$4.18	$1.72	2nd
Cleveland	4.03	1.88	3rd
Cincinnati	3.94	1.32	3rd
Seattle	3.29	1.77	3rd
Boston	3.28	4.06	2nd
Washington	2.58	0.66	2nd
Jersey City	2.33	1.36	2nd
Baltimore	2.21	2.21	2nd
Milwaukee	2.01	1.48	2nd
Newark	1.94	1.79	2nd
New Orleans	1.75	1.22	4th
Indianapolis	1.64	1.41	3rd
Rochester	1.51	1.28	3rd
Minneapolis	1.36	2.38	3rd
Pittsburgh	1.07	1.14	3rd

With the exception of Cleveland and Cincinnati (third class), the first ten cities are all rated second class by the National Board of Fire Underwriters. The equipment value in these cities ranges from $4.18 in Buffalo to $1.94 in Newark. The last five cities, except New Orleans (fourth class), are all rated third class, and their equipment values range from $1.75 in New Orleans to $1.07 in Pittsburgh.

The value of equipment owned is only part of the equipment story. Is it *modern* equipment? Dollar for dollar, much more can be done with up-to-date equipment than with the tools of eight years ago.


Montgomery, Ala.
Alabama's capital is one of the numerous cities that have recently investigated the opportunities offered by modern large capacity elevated storage. As a result, Montgomery now has available in this new Horton radial-cone bottom tank, capacity for one million gallons of water — all within a range of head of only 25 feet — for meeting peak demands and maintaining uniform distribution pressures.

CHICAGO BRIDGE & IRON COMPANY

Chicago.....2127 Old Colony Bldg.
New York.....3308-165 Broadway Bldg.
Cleveland.....2236 Rockefeller Bldg.
Detroit.....1501 Lafayette Bldg.
Philadelphia..1616 "1700" Walnut St. Bldg.
Boston.....1501 Consolidated Gas Bldg.
Birmingham.....1502 N. Fiftieth Street
Dallas.....1405 Liberty Bank Bldg.
San Francisco.....1033 Rialto Bldg.
Houston.....2919 Main Street
Tulsa.....1625 Hunt Bldg.
Los Angeles.....1403 Wm. Fox Bldg.

Fabricating plants in CHICAGO, BIRMINGHAM, and GREENVILLE, PA.

When you write for that catalog, kindly mention THE AMERICAN CITY.

Water Supply and Purification

Fizz Water Disliked by Los Angeles

FIZZ water is all right in bottles, but it isn't wanted in the Los Angeles Owens River Aqueduct and will be eliminated when work now under way in the 7,000-foot Soda Hills tunnel is completed.

Carbon dioxide gas bubbling into the tunnel at that location does not affect the potability of High Sierra water brought through the 238-mile water carrier, but it did have a corrosive effect on the fifteen steel siphons in the system. Elimination of the gas will permanently decrease maintenance expense on the siphons. The method of controlling the gas is similar to that used in the Mono Craters tunnel. A trench 15 inches square is cut into the bottom of the tunnel, serving as a trap for the gas, which is heavier than air and tends to sink to the bottom of any enclosure.

Eight adits intercept the trench at approximately regular intervals along the 7,000-foot tunnel, permitting the gas to escape into the outside air. The gas pressure is so great that it makes a hissing noise as it leaves the adit openings.

A test installation made in 1932 showed the practicability of the plan. The present project was undertaken last year when PWA assistance was granted for municipal Water Bureau work.

Municipal Reservoirs Re-roofed by WPA

THE replacing of 25-year-old covers over three municipal water reservoirs with galvanized corrugated iron roofs was recently completed as a WPA project in Redlands, Calif. The roofs replaced were so old and in such bad repair that they constituted a potential threat to the purity of the domestic water supply.

The estimated cost of the project was more than $21,000, about evenly divided between labor and materials, but the project was actually completed for approximately $2,000 less than this figure. The time required for the work was approximately four months and employed an average of eighteen men. The accompanying illustrations show the new roof in process of being constructed and after construction was completed.

GEORGE S. HINCKLEY,
City Engineer.

Treatment of Water with Silver

IN general, there are three commercial methods of using silver as a bactericidal agent. One commercial organization has patented various methods of exposing water and other liquids to silver deposited on sand, porcelain and various types of filtering devices. A method of applying silver by electrolysis has also been patented. Another commercial process combines heat in addition to the difference in E.M.F. which exists between silver and nickel electrodes when kept at different temperatures in the material to be treated, and may be considered to be a modified pasteurization process. In all cases which came to the attention of James Gibbard, Bacteriologist, Laboratory of Hygiene, Department of Pensions and National Health, Ottawa, Canada, the objective is the same, namely, to secure the solution of silver. Apparatus has been designed and recommended for the treatment of water, ice, milk, beer, vinegar, wine, alcohol for perfumes, liquors, gin, whiskey, brandy, cider, and fresh fruit juices; in fact, there is hardly a food industry in which water plays any part for which silver treatment has not been recommended as a valuable sterilizing agent.

The Department of Pensions and National Health became interested in the problem first in reference to the application of silver as a method of treating domestic waters. This aspect of the problem was studied in considerable detail. As the result of many experiments with metallic silver, colloidal silver, silver oxide, and certain commercial methods of using silver, the conclusion has been reached that silver metal possesses bactericidal action by reason of the solution of silver ions, probably from silver oxide. It is believed that this conclusion is strengthened by the fact that reduction by glucose substantially lessens the bactericidal action of electrically dispersed silver, colloidal silver, and silver oxide.

Silver nitrate, silver oxide and electrically dispersed colloidal silver when diluted on the basis of silver concentration, all possess a similar bactericidal or oligodynamic activity. The bactericidal activity of silver nitrate or of silver oxide is markedly reduced by the presence of proteins or glucose. Grape juice purported to have been commercially treated by a silver process did not show significant amounts of silver either spectrographically or bacteriologically. Silver in certain normal food materials has been estimated by spectrographic analysis, and in the substances examined was not found to be present in significant proportions.

It is recommended that the use of silver as a preserving agent in foods, or as a method of treating polluted water, be carefully considered by public health officials, and that the method be not used until all doubts concerning the health risk are removed by indisputable evidence to the contrary.

—Prepared from a paper by JAMES GIBBARD presented at a joint session of the Laboratory and Food and Nutrition Sections of the American Public Health Association at the sixty-fifth annual meeting.

THE NEW GALVANIZED ROOF FOR ONE OF THE THREE MUNICIPAL RESERVOIRS IN REDLANDS, CALIF., UNDER CONSTRUCTION, AND COMPLETED

Liquid Power for 50,000,000 MOTORS

It was only yesterday that gasoline was a drug store item. Today, Oil Refineries must produce enough "liquid power" to supply more than fifty million motors. And here again the famous Layne Pumps and Deep Well Water Systems are depended upon for billions of gallons of water each day. Throughout the entire Oil Industry, the name Layne stands paramount for long life, economical operation and low upkeep expense. The Layne reputation for high hydrological engineering skill does not end at America's shores. In every oil producing foreign country it is the most universally used of all water supply equipment.

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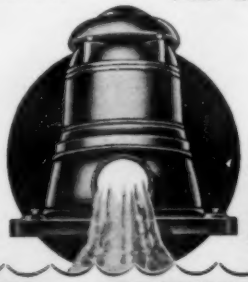
LAYNE-OHIO CO. . . . COLUMBUS, OHIO.
LAYNE-TEXAS CO. . . . HOUSTON, TEXAS.
LAYNE-WESTERN CO., KANSAS CITY, MO. CHICAGO, ILL. MINNEAPOLIS, MINN. AND OMAHA . . . . . NEBRASKA.
LAYNE-BOWLER NEW ENGLAND COMPANY. BOSTON . . . . . MASSACHUSETTS.
INTERNATIONAL WATER SUPPLY, LTD., FORT ERIE, N. . . . . ONTARIO, CANADA.



LAYNE PUMPS
WELL WATER SYSTEMS

Streets and Highways

A NO. 11 AUTO PATROL WORKING ON THE SITE FOR THE NEW MUNICIPAL STADIUM, WINSTON-SALEM, N. C.

A DIESEL NO. 11 AUTO PATROL GRADING EARTH STREETS PRIOR TO OILING, IN LOS ANGELES, CALIF.

Paving Repair Costs in Oak Park, Ill.

DEPRESSIONS and irregularities in the wearing surface of sheet asphalt pavement in Oak Park were repaired during 1936 by filling in the low places with a prepared mix. A total of 429 square yards of surface were repaired in this manner at a total cost of $442.91. Similar repairs in asphaltic concrete pavement were made to 245 square yards of surface at a total cost of $249.84.

For a number of years the Street Department has pursued the policy of repairing the breaks, depressions and irregularities in the surface of water-bound macadam pavement with stone and asphalt binder, and a seal coat of asphalt and gravel over the entire surface. All the macadam pavements have been treated in this manner, giving the appearance in many instances of sheet asphalt surfaces. The seal coat given to the pavement has been in use for several years, and there has been practically no maintenance except to small breaks in the surface. A total of 648 square yards of surface were repaired at a total cost of $528.08.

A total of 582 square yards of preliminary surfacing was done at a cost of $292.20, or 50.2 cents per square yard, and a Tuftread coating was applied on 21,821 square yards at a cost of $4,090.80, or 18.7 cents per square yard.

Brick pavements were repaired where there were depressions or irregularities in the grade and where the bricks were in good condition, by taking up the brick and adding sand-fill or screenings to bring the brick to proper grade. Where the bricks were not in good shape, repairs were made by filling in the low places with macadam and asphalt binder. A total of 289 square yards of surface were repaired in 1936 in this manner at a total cost of $234.42.

C. A. WALLS,
Commissioner of Public Works.

Topographic Map as Relief Project

THE work of creating an enormous topographical map of the metropolitan area of Denver, Colo., has just been started as a WPA project. This new map will supplement a detailed topographic map recently completed of the city of Denver proper. The new map will embrace an area of 800 square miles, the work will employ 200 persons, and an initial allocation of $75,000 has been made for the project.

The detailed map of the Denver city area was recently completed at a cost of approximately $350,000 on a scale of 200 feet to the inch. The scale of the metropolitan area map will be 2,000 feet to the inch. If the map of the metropolitan area were set up in the detail observed in making the Denver city map, the estimated cost would run to a million dollars as a WPA project.

Road Oiling in Toronto

THE oiling of unimproved roadways and lanes in Toronto, Ont., is undertaken only as a means of allaying dust. The number of applications per season is dependent entirely upon the traffic on the street and the condition of the roadway, together with weather conditions. Generally, two applications are sufficient during one season. As a result of the construction of surfaced roadways, the unimproved street mileage in Toronto has been reduced from 136 miles to 43 miles in ten years.

ROAD OILING, 1926-1936 IN TORONTO

Year	Mileage	Area Oiled	Gals. Used	Total Cost Oil and Labor	Cost per Mile	Cost per 1,000 Sq. Yds.
1926	136.9	1,613,569	244,673	$23,639.97	$171.81	$14.65
1927	135.7	1,527,079	267,278	24,207.45	178.39	15.83
1928	139.1	1,578,409	294,130	21,322.12	153.29	13.51
1929	197.	1,674,054	310,899	19,909.82	101.07	11.89
1930	73.1	758,320	143,320	9,890.81	135.30	13.09
1931	52.1	624,199	120,448	8,176.70	156.94	13.10
1932	27.9	362,000	57,825	3,946.53	141.45	10.87
1933	27.5	359,601	64,512	3,870.72	158.04	12.09
1934	46.2	578,841	102,565	6,217.13	134.60	9.52
1935	39.	521,971	76,675	4,722.76	121.10	9.05
1936	43.7	611,763	91,308	5,628.90	128.81	9.21

HERE'S WHY 90% OF ALL SNOW PLOW BUILDERS USE BLACKHAWK HYDRAULIC EQUIPMENT!

SERVICE STATIONS in the
Address of your Service Station (which repairs all Blackhawk Hydraulic Equipment) — furnished in "Service Slants" See coupon.

1 NETWORK OF SERVICE STATIONS in the Snow Removal Belt

Plow manufacturers choose Blackhawk Hydraulic Blade Controls because they stand the gaff better than ANY other control! IMPORTANT also to plow builders — and users — is Blackhawk's nation wide network of Service Stations — guarantee that the most vital part of the plow is kept in shape to wrestle every blizzard! Note that a Blackhawk Service Station (see map) is within 24 hours' shipping distance from you.

2 EFFICIENCY of Hydraulic Controls

New plows — and antiquated mechanical plows — are easily operated when Blackhawk Hydraulic equipped. Operator in warm cab controls the Hydraulic Blade Lifts with speed and accuracy. Greater efficiency of manpower and equipment gives taxpayers more service on smaller budgets.

3 DEPENDABILITY of Blackhawk Units

Hydraulic snow plow controls operate on the same principle as hydraulic jacks. Snow plow makers naturally choose Blackhawk—World's Largest Manufacturer of Hydraulic Jacks. Perfection in design and function of Blackhawk Controls makes the best snow plow better!

HIGHWAY DEPARTMENTS!

Here are 3 things to do before snow flies:

1 Make certain all new snow plows are Blackhawk Hydraulic equipped.

2 Take a tip from modern plow builders. Refit old plows with Blackhawk Controls.

3 Check preparedness of present Blackhawk Controls to meet winter battles. Write Blackhawk today for FREE "Service Slants" on how equipment can be ready for action at all times!

Clip Coupon--Mail Today

BLACKHAWK MFG. CO., Dept. AC-10
Milwaukee, Wisconsin

Without Obligation, send "Service Slants" to:

Name.....

Address.....

City..... State.....

BLACKHAWK Hydraulic Controls

Street Cleaning and Snow Removal

New Yardsticks for Street Cleaning

WHATEVER may be the ultimate purpose of cleaning streets—whether it be a matter of esthetics or of health—the immediate objective is obvious: to maintain the street in a relatively dirt-free condition. To explain the term "dirt-free" is a somewhat more difficult problem, for the dirt on a street is not a homogeneous product. It consists of fine dirt—material produced by the wear and tear of the pavement itself, mud and soil washed into the street, animal refuse, and oil and grease from vehicles—and paper and other litter. A rough measure of the dirtiness of a street will be given, however, by the weight of refuse lying on each 1,000 square yards of pavement. When a cleaning treatment is applied to the street, this weight is reduced practically to zero. After a cleaning treatment, it increases at a more or less uniform rate until the street is cleaned again. The average weight during the period is approximately half the weight removed by the cleaning treatment.

Primarily because of traffic conditions, both dirt and cleaning treatment are usually confined to a strip of pavement near the curb. Therefore, "average number of cubic yards of dirt lying on a curb-mile of pavement" might be used as the primary unit for measuring the adequacy of street-cleaning service. By keeping a check on the rate of accumulation of dirt on different streets in the city, this index can be used as one of the factors in determining the frequency of treatment necessary to secure any desired degree of cleanliness. Unfortunately, the index can be computed only when the refuse is collected and measured, and this is not available when the streets are cleaned by flushing.

The performance units selected by the Committee on Uniform Street and Sanitation Records, and in quite general use, are the cleaning mile and the cubic yards of sweepings removed. The cleaning mile "represents a lineal mile of street cleaned once either by machine flushing, machine sweeping, hand brooming, beat patrol, or hose cleaning. . . . Each cleaning method is measured separately, even though one method may supplement another. . . . The cleaning work, or costs per cleaning mile, of one method cannot be compared directly with another within a city without considering the totally different type of work done." The supplementary measure of "cubic yards of sweepings removed" is included to account for variations of work which may be due to variations in the amount of dirt deposited on the streets. It would seem that a time study might afford a basis for discovering the relative effort involved respectively in "cleaning of one mile of streets" and "removal of 1,000 cubic yards of sweepings" in order to make possible a single, comprehensive performance unit which can be related to costs. The unit cost—per mile of street cleaned, per cubic yard of dirt removed, or in terms of the suggested composite unit—can be used in determining efficiency by comparing different administrative districts or different cleaning methods, or by comparisons with an estimated "standard cost." Preventive measures may be very useful in eliminating litter. Effectiveness of such measures will be indicated by a decrease in the amount of litter accumulating per unit time.

—From the fifth installment of "Measuring Public Works Activities," by CLARENCE E. RIDLEY and HERBERT A. SIMON, Executive Director, International City Managers' Association, and Research Assistant in Political Science at the University of Chicago, respectively, published in *Public Management*.

Snow-Removal Costs in Oak Park, Ill.

THE Annual Report of the village of Oak Park, Ill., for the year 1936 shows that 504 loads of snow were removed, 40,000 pounds of salt used, 25½ cubic yards of sand used, and 314½ cubic yards of cinders employed to check skidding on icy pavements. Whenever weather conditions make it necessary, snow is removed from the sidewalks and street pavements throughout the village. The 200 miles of sidewalks are plowed with steel V-shaped horse-drawn plows. Horses from the garbage and rubbish collection departments are used for plowing. Teams are started out early in the morning and, as a rule, all sidewalks are plowed by noon.

Sidewalks leading to transportation stations and to schools are plowed first. All street pavements in the village are plowed. Boulevards, through streets and business districts are plowed first; that is, the snow is pushed from the pavement to the curbing. After the principal thoroughfares are plowed, the residential streets are plowed. Snow from the business districts and the principal intersections, and from around public schools, churches, and other places of gathering, is removed by truck and disposed of in vacant lots around the village.

In January, February, and April, 1936, there was considerable snow. The 200 miles of sidewalks in the village were plowed six times, and the boulevards and through streets, of which there are 11.5 miles, and all other streets, 100 miles, were plowed six times.

On December 7, 1936, the Village Board accepted the bid of the R. C. Larkin Co. for furnishing two snow-plows to replace worn-out equipment.

Total cost of snow removal in 1936 was:

Labor	$3,105.96
Superintendence	277.95
Teams	65.10
Trucks	363.51
Hired teams	55.00
Repairs to equipment	45.90
Supplies	523.45
Tools and equipment	204.04
	$4,640.91

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PREPARATION . . .

THE public seldom realizes the preparation required in producing water suitable for household needs. Careful as the personnel may be in preparing water free from bacteria and suspended matter, nevertheless, if tastes and odors are present in the tap, Mr. John Public in the smaller communities will usually resort to water from unauthorized sources, in the belief that the sparkling glass of well, or spring water, represents the "tops." Case history is replete with serious epidemics resulting from the use of unauthorized sources of water.

In the larger communities, when tastes and odors break through, Mr. and Mrs. John Public and their neighbors rise in protest and flood the Water Department with complaints, abuses, etc. The local press, with their headlines, play this situation up as important news and frequently it either results in the dismissal or the non-appointment of personnel who have well served their Municipality.

Why not follow the lead of many Municipalities in feeding ACTIVATED CARBON daily so that when serious tastes and odors are present in the raw water supply, the plant has already been seeded with ACTIVATED CARBON and all that is necessary is to step up the dose in order to furnish a palatable water free from complaint.

Our Service Men are prepared to run Threshold Tests in your Plant, to show where the application of ACTIVATED CARBON will give you the most economical use.

We have released to over 1,000 *newspapers a resumé of the treatment water is given to make it fit for household use with the idea of building up Good-Will for the water personnel. Mimeographed copies are available to water men in the event they wish to use it with their local newspaper.*

Make your plans now to attend the Annual Convention of the Southwest Section of the American Water Works Ass'n to be held Oct. 18-21, 1937, at the Hotel Galvez, Galveston, Tex.

NUCHAR AQUA

INDUSTRIAL CHEMICAL SALES

DIVISION WEST VIRGINIA PULP AND PAPER COMPANY

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New York, N. Y.

417 SCHOFIELD BLDG.,
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205 W. WACKER DRIVE
CHICAGO, ILLINOIS

Public Health

Not a Batty Idea!

ACCORDING to a report that recently came to our desk, some 35 years ago San Antonio, Texas, citizens suffered from a great deal of malaria. Dr. Charles A. R. Campbell, a local physician, conceived the idea of "subsidizing" armies of bats to rid the city of its mosquito-borne diseases. City officials thought it ridiculous, but Dr. Campbell established a "bat refuge" at his own expense near the spot where the city's sewage at that time spread out to form stagnant pools. Very soon, mosquitoes had been reduced to such an extent that cattle could graze on nearby meadows in peace, and even humans could frequent the place in comfort.

The amazed city fathers stopped laughing and in 1914 enacted an ordinance imposing fines of $5 to $300 on persons convicted of killing bats. Going further, the city put up bat houses at its own expense, and the result was a clean bill of health as far as malaria was concerned.

The "bat" idea may not be practical everywhere, but it also is noteworthy that in recent years several notorious "mosquito spots" along the Atlantic seaboard, including the New Jersey coast and Cape Cod areas, have made amazing progress toward eliminating the insects through the use of other methods, notably widespread oiling operations in swamps, stagnant inlets, and small ponds. Boys from the CCC camps have undertaken many such jobs, and in others WPA labor has been used.

Public Health Nursing in Topeka, Kansas

THE Topeka Public Health Nursing Association is an independent organization created for the purpose of giving efficient and sympathetic care to sick and needy persons in the city of Topeka at their homes, and to give health education in these homes, particularly with regard to the better care and feeding of the children. The Kansas statutes provide that for this organization the city may levy a tax of one-fifth of one mill on the dollar. From this source, the Association received $13,604.56 in 1936. Other sources of income, including donations, pay and contract service, amounted to $3,686.77 in 1936.

The staff consists of eight graduate registered nurses, having special training in public health nursing, one office clerk, and one social investigator for the municipal clinics. The nurses, under physicians' orders, give bedside care in the home, instruction to the family in the care and prevention of sickness and disease, and assist the volunteer physicians in the municipal clinics. During 1936 this organization cared for 1,097 patients, which included acutely ill, maternity, baby, pre-school, and school children. A total of 13,919 visits were made to patients in their homes.

The Curative Workshop, a division of the Public Health Nursing Association, is located in the city building. This division is maintained for the treatment of persons disabled by infantile paralysis, rickets, arthritis, etc. All cases treated are referred from the orthopedic clinic or private physicians. During the year 499 patients received 6,954 treatments.

The per capita cost of this public health nursing service was 18 cents in 1936 and 17 cents in 1935.

No Typhoid in New York in March, 1937

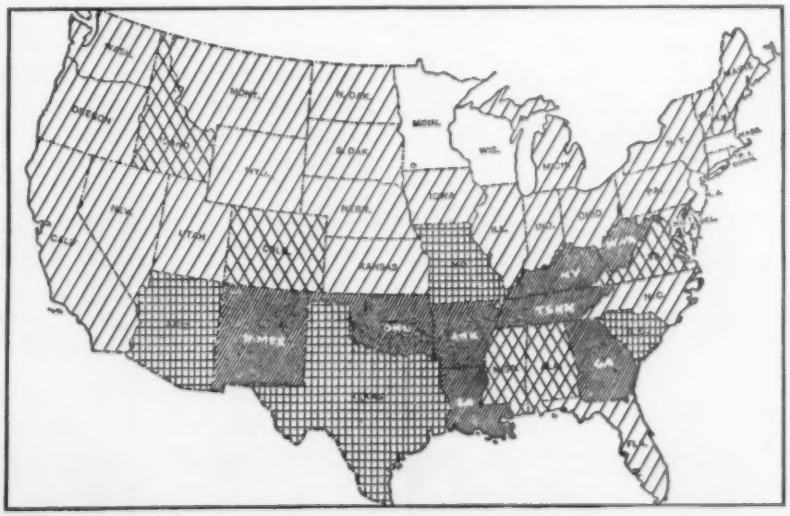
For the first time in the history of the New York State Department of Health, the Division of Vital Statistics reports not a single death from typhoid fever during the entire month of March, 1937. Dr. J. V. DePorte, Director of the Division of Vital Statistics, reported that 30 years ago 117 persons died from the disease during the month of March. Twenty years ago there were 40 deaths, and 10 years ago the number had dropped to 11.

U. S. Typhoid Fever Cases

TYPHOID fever is one of the several diseases whose causative factors are generally supposed to be best known and understood bacteriologically and epidemiologically. Among the factors usually designated as influencing the incidence and mortality rates of this disease are environmental sanitation, water supplies, food supplies, climate, geological and soil conditions, popular education along sanitary lines, distribution of population, bedside prophylaxis and public health, medical and nursing services. The very marked reduction in mortality from typhoid fever in all regions of this county during the last 30 years appears to have followed, with convincing evidence of a relationship of cause and effect, advance in sanitary improvement or in elimination of the readily controllable causative factors, including especially insanitary excreta disposal, polluted water supplies, and contaminated food supplies.

The accompanying map, showing the distribution of typhoid fever mortality, presents features which, in general, are better known than with most diseases. There are breaks in the groups of states or regions with the higher rates. For example, Mississippi, Alabama, Florida, Virginia and North Carolina are adjacent to and in the same region with states to the north, east, south, or west of them which have considerably higher rates and therefore are out of line with what otherwise might be defined as a high-rate zone.

From all the evidence at hand, according to *Public Health Reports* issued by the United States Public Health Service, the geographical distribution of typhoid-fever mortality in the United States is largely, if not entirely, explicable by regional and local differences in the application of general sanitary measures and in climatic and soil conditions. The possibility must be admitted, however, that there are factors in the causation of this disease which are not yet known. Therefore, typhoid fever, which we are pleased to list among the vanishing enemies of mankind, still appears to present a field for important epidemiological work.



DISTRIBUTION OF TYPHOID FEVER IN THE UNITED STATES

ELEMENTS of PUBLIC SAFETY

THREE-FOLD FIRE ALARM BOX

Not more than 500 feet to the nearest box in closely-built residential districts . . . convenient to every group of buildings, manufacturing establishments, and institutions in sparsely-built districts . . . in congested high-value districts—"*A Box a Block*"—with special attention to Life Hazards . . . a safe rule to follow.

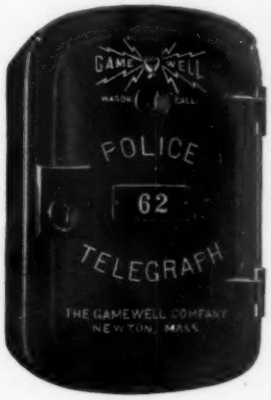
Fire and Crime continue to exact a fearful toll in property and human life

Fire out of bounds . . . the depredations of more than four million criminals . . . it is estimated cost the nation . . . more than ten billion dollars annually. A burden American industry can ill afford to bear.

Systems of communication . . . swift and reliable . . . necessary at all times to the welfare of the community as to an army in the field . . . are essential elements of public safety for mobilizing the fire extinguishing agencies and the forces of law and order.

Gamewell Fire Alarm and Police Signal Systems . . . with adequate box distribution . . . accessible to all citizens . . . and Radio control of the mobile units of police and fire departments . . . well maintained . . . represent the utmost in speed, reliability and efficiency . . . an investment in public safety . . . and true municipal economy.

EXEMPLAR POLICE BOX



Police Signal Systems provide . . . adequate patrol of policed areas . . . secrecy in police communications . . . prompt assistance in emergencies . . . direct connection with police departments for banks, commercial establishments and residences . . . the basic element in communications . . . enabling the police forces to attain the highest degree of operating efficiency.

Write for descriptive literature.

THE GAMEWELL COMPANY

NEWTON UPPER FALLS MASSACHUSETTS

Public Safety

Teletype in Patrol Cars

With more than 440 municipal police departments using radio, experiments are now being conducted in the use of teletype for patrol cars, by which the solo driver can leave his car and still receive orders.

Benefits of Motor-Vehicle Inspection in Portland, Ore.

1. THE inspection has caused improvement in the safety condition of approximately 90,000 automobiles and trucks. Of these, approximately 20,000 have had defective and unsafe braking systems corrected; 10,000 have had steering apparatus repaired; and 60,000 have had other miscellaneous defects attended to.

While the death and accident list in the city of Portland for 1937 is higher than for the same period in the past year, it must be remembered that with the great increase in the number of vehicles in use, along with the higher speed and the more miles traveled, no one can estimate what the result would have been had these unsafe cars been permitted to continue in operation in their defective condition.

2. It has raised materially the standard of workmanship performed by the automobile mechanic, and has given for the first time to the motorists an unprejudiced check upon the work performed by the service stations and repair shops.

3. It has discouraged, if not entirely eliminated, the practice of juveniles' purchasing junk cars for a few dollars and attempting makeshift repairs themselves. It also has removed from the streets many decrepit and unsafe vehicles owned by irresponsible and deliberately careless persons.

J. V. SAVAGE,
Superintendent, Motor Vehicle Inspection Station, Portland, Ore.

Police Accommodations Available Anywhere

THE public safety features of the recent national air races at Cleveland, Ohio, were handled by a detachment of city police using the above Trailmobiles made by The Trailer Co. of America and drawn by White tractors. HQ contains telephone, lights and two-way radio. The 22-foot jail, below it, with folding steel gates at the rear, accommodated 25 pickpockets, con-men and drunks. Each vehicle is here escorted by an officer on a Harley-Davidson motorcycle.

Beat the Criminal With the Best

CITIES large and small, in an effort to strengthen their enforcement arms, are seeking modern systems of crime records, scientific traffic-accident and crime-prevention programs, efficient police communications equipment and adequate criminal investigation and identification facilities.

Recommendations for these improvements, among others, were made to Saginaw, Mich., and Greenwich, Conn., recently, by Public Administration Service, governmental consultants of Chicago, following a survey of their Police Departments.

Saginaw, a city of 80,000, is off the beaten path of big and continuous crime, because of its comparative isolation from other industrial centers. Robberies, burglaries and affronts against the public peace are the chief concerns of police. Greenwich, one-half the size of Saginaw, is located on the Boston Post Road. It therefore has a special problem in traffic, as well as offering strong temptation by its numerous large estates to depredations by New York and Boston criminals.

"Although each of these cities has particular problems that need special treatment, there are certain recommendations that could be made for both of them, and for most other cities of their size," says David L. Robinson, Jr., in charge of the Public Administration Service staff engaged in the surveys. "Proper distribution of police strength is essential. This means assigning men to the patrol, investigation, records and communications divisions, in the ratios found most effective. Keeping administrative records and statistics of crime matters and departmental work is another essential. An efficient record system can be used to check offenses committed and arrests made, to assist in identification, and to determine the effectiveness of the police department. Such a system will reveal unusual problems, assist in determining the number of men required on the force and the most effective beat layouts."

As an example of new police problems, traffic-accident prevention bureaus in Saginaw and Greenwich have been set up under direction of the Safety Division of the International Association of Chiefs of Police. The bureaus will be manned by regular police officers trained to apply advanced detective techniques to traffic-accident investigations and bring violators to justice, as well as to aid accident victims.

MOTOR-VEHICLE INSPECTION STATION, PORTLAND, ORE

Seattle Regulates Tow Cars

SEATTLE has by ordinance established bonded towing garages authorized to do police towing of cars involved in accidents, and by authority of the investigating officer, but allowing the maximum charge of $2.50 for the towing.

Any towing done from the scene of an accident other than by authority of the investigating officer is at the owner's personal responsibility. Garages may be prosecuted for removing cars from the scene of an accident without proper authority from either the officer or the authorized owner.

WILLIAM H. SEARS,
Chief of Police, Seattle, Wash., in a letter to *Police Chiefs' News Letter.*

NEW FANFOLD MACHINE

Burroughs

There's Less for the Operator to Do!

Users of fanfold machines are amazed at the simple, automatic action of this remarkable new Burroughs Fanfold Machine.

They quickly realize that it cannot waste costly time—that it does not waste physical effort.

See for yourself how it will enable your operators to sustain high-speed production with much less effort, thereby lowering your costs of handling fanfold or continuous forms of any kind. Ask for a demonstration.

MAIL THIS COUPON!

BURROUGHS ADDING MACHINE COMPANY
6100 Second Blvd., Detroit, Mich.
I should like to know more about this new Burroughs Fanfold Machine.
NAME _____
ADDRESS _____

JUST TOUCH ONE KEY—

Carriage Opens ***Automatically!***

Forms are Released ***Automatically!***

Carriage Returns ***Automatically!***

Carbons Shift ***Automatically!***

Then—as the operator removes the completed set of forms—

New Forms Lock in Place ***Automatically!***

Carriage Closes ***Automatically!***

THE MACHINE —NOT THE OPERATOR— DOES MOST OF THE WORK

OCTOBER, 1937

Vol. LII, No. 10

The American City

470 Fourth Avenue
New York

35 Cents, $2 a Year

The City's Place in the Nation

*Significant Recommendations from a Report Entitled "Our Cities: Their Role in the National Economy," Released Last Month by the Urbanism Committee of the National Resources Committee**

THE American way of life has always assumed that there was no ceiling to our potential growth. With the marked slowing-down of our population increase and the apparent approach toward a stationary population and national maturity, we cannot reasonably expect a continuation of the unprecedented growth of American cities witnessed during recent decades. These changes, as yet not generally realized, demand a more prudent use and conservation of physical and human resources and the substitution in place of the philosophy and aspiration of bigness the philosophy and aspiration of quality. Almost every recommendation in this report is affected by the implication of this impending development.

Because of the marked slowing-down of our population growth, the Committee recommends that all national and local policies, public and private, pertaining to cities, which have proceeded on the expectation of continuous and unlimited growth, be reexamined in the light of this approaching stabilization of our population.

Social Welfare

The Committee approves the policy of continuing the participation of the Federal Government in the financing of a broad public assistance program with recognition of the needs of those groups not at present included in the social-security program, and recommends a prompt inquiry into the methods for carrying out this policy. There should be a maximum decentralization of administration consistent with reasonable standards of personnel and services, preservation of the local interest and requirement for local participation.

Crime Prevention and Control

The Committee recommends:

1. Changes should be made in the organization and procedures of the local criminal courts to make them more effective agencies for crime prevention. The time is here to substitute on a wide front investigation for prosecution and treatment for punishment. State statutes and local charters should be amended to provide legal authority for the carrying-out of this recommendation.

2. Encouragement should be given to local communities in the initiation and extension of broad positive programs for the prevention of juvenile delinquency and crime, through a more adequate recognition of the problems of youth.

3. The Federal Government should continue and extend its cooperation with local communities in crime-prevention programs, including, among other things, planned and supervised recreational projects, slum eradication, and programs of better housing for the low-income groups, particularly in areas with high delinquency and crime rates.

4. The Federal Government should continue to cooperate in the enactment and administration of uniform criminal laws and inter-state crime compacts.

5. Regional cooperation among police systems, Federal, state, and local, and other law-enforcing agencies, including the judicial branch, should be encouraged and fostered.

Urban Leisure

Because leisure time is increasing, because the workaday tasks of modern industry, largely concentrated in cities, are becoming more and more mechanical, monotonous, and repetitive, the Committee recommends a national policy which will encourage the states, cities, and private agencies to provide, especially for low-income groups, adequate recreational and cultural opportunities for personal self-development, free self-expression, and group participation in play, art, literature, science and education for youths and adults. The Federal Government may well further these aims by cooperating with and giving aid to the states, local communities, and other public or private agencies in their efforts thus to raise the level of life in the urban communities and in the nation as a whole.

Abolition of the Slum

Convinced that the problem of slum eradication must be attacked promptly and vigorously by local urban government with the aid and cooperation of state and Federal governments, the Committee recommends that:

1. Municipal authorities should modernize and ag-

* Much important material has of necessity been omitted from these four pages of excerpts from an exceedingly valuable 88-page report. Readers of THE AMERICAN CITY are urged to secure and study the complete document, the scope of which is outlined briefly on page 129 of this issue.

gressively enforce to the limit of their powers their building and sanitary codes and zoning ordinances; they should initiate the widest program of demolition possible thereunder; and, where existing building and sanitary codes and ordinances dealing with the demolition of unfit buildings are inadequate, these should be made more stringent in order to enable the community to rid itself of such structures. Where necessary, state laws authorizing such codes and ordinances should be enacted.

2. Local-urban governments should consider the adoption of a single standard for buildings, old and new, and the progressive, wholesale condemnation under the police power, after a reasonable period of grace, of all buildings that either for structural or sanitary reasons, or for reasons of inadequacy of light and air, do not measure up to an acceptable standard of use and occupancy.

3. All government agencies should adopt the policy, when they are acquiring land for public works or housing, of not compensating the owners of buildings unfit for human use. Wherever necessary, state constitutions should be amended, and state laws and local ordinances should be passed, authorizing the carrying-out of this policy.

4. Local planning and zoning commissions should rezone the decayed and blighted districts, and housing authorities should formulate their programs with the view to facilitating the rehabilitation of these areas for stable, economically sound and socially desirable uses.

Housing

In order that a large proportion of American urban families should not continue to live in unfit dwellings, and in order to supply the urgent need for housing facilities conforming to an acceptable minimum standard for the low-income groups[1] and thus to attack the serious problems of health, welfare and order, which are directly related to inadequate housing, the Committee recommends that:

1. A national[2] policy should be adopted for rehousing the low-income groups at acceptable minimum standards, as a cooperative undertaking among Federal, state and local governments and private enterprise.

This policy should be designed to stimulate local initiative, recognize local circumstances, and vest the control, save in exceptional cases, in the local authorities.

2. The Federal and state governments should extend, in accordance with local needs, financial assistance to local authorities conditioned on the existence of a comprehensive city plan and housing program meeting satisfactory standards.

3. The recommended Federal credit agency[3] should extend capital grants, long-term, low-interest loans or annual rent subsidies to states and cities in order to aid in carrying-out this national housing policy.

4. The Federal Government and the states should provide long-term, low-interest loans, under proper safeguards, for housing purposes to individual home builders and building societies.

5. All Federal housing activities should be coordinated or consolidated in order to further the more effective functioning of all Federal agencies now engaged in the field of housing in urban areas. This should include continuous research into the problems of reducing housing costs.

6. A model state housing law should be prepared to enable states and local communities to take part in a national housing program and to carry out community rehousing programs in which public and private groups can cooperate. The states should be encouraged to enact legislation in conformity with such a model state housing law.

7. State and local authorities should consider the reduction of the rate of taxation on buildings and the corresponding increase of such rates on land, in order to lower the tax burden on home owners and the occupants of low-rent houses, and to stimulate rehabilitation of blighted areas and slums.

Urban Land Policies

Better to control urban development, to combat land speculation, and to have land available for low-rent housing, recreational, educational and other public facilities likely to be increasingly required in the future, the Committee advocates a more liberal policy of land acquisition by municipalities and accordingly recommends the liberalizing of the fundamental laws of the states in order to permit urban authorities to acquire, hold, and dispose of land with greater freedom and to allow a wider interpretation of the term "public use."

Since opportunities for land acquisition often are best when the urban community is least able financially to make such outlays, the Committee recommends that the suggested Federal credit agency[4] should be authorized to make loans to urban communities for the acquisition of both improved and unimproved real estate for the purposes mentioned above.

Transportation and Other Public Utilities

In the interest of a more prudent use of our national resources, material and human, and of a better-balanced and more stable local urban structure, the Committee recommends that:

1. A prompt and thorough study should be made by the National Resources Board of our transportation facilities to:

(a) Develop the general framework of a coordinated national transportation system directed towards an economically more effective and socially more desirable distribution of economic activities and urban pattern;

(b) Determine the feasibility of creating a unified Federal agency for the regulation of all forms of transport.

Since the studies of this Committee have indicated that interconnection, coordination, and integration of the electric power systems will tend to encourage a wider distribution of industry and population, the Committee recommends that:

1. A further study be made by the National Resources Board or other appropriate Federal agency of the prob-

[1] This need has been estimated to involve the construction of approximately 900,000 family dwelling-units annually during the next decade.

[2] It should be noted that the term "national" as used here and throughout this report does not refer solely to Federal policies or actions nor exclusively to governmental enterprise. Rather it signifies a coordinated country-wide policy directed toward achieving objectives for the nation as a whole.

[3] See recommendations under "Federal-City relations."

[4] The establishment of which has been recommended by the President's Committee on Administrative Management to serve as a central planning agency under the President.

able effect on urbanization of the transmission and distribution of electricity over wider areas.

2. A plan should be developed by the appropriate Federal agency in cooperation with state authorities and private companies for the coordination of all private and public generating, transmission and distribution facilities.

Planning

Recognizing the potentialities of planning as an effective aid in the better use and conservation of our resources, human and material, the Committee urges strengthening and extending the scope of planning on all levels of government and in regional areas, and accordingly recommends that:

1. The Congress should enact legislation to establish a permanent National Resources Board with the necessary authority to engage, among other things, in the following activities:

(a) To continue and extend encouragement, cooperation, and support to state, regional, and local planning agencies.

(b) To continue, systematize, and improve the long-range programing of public works in cooperation with state, regional, and local planning agencies.

(c) In cooperation with industry and labor to establish an industrial planning section which is to develop, in collaboration with state planning boards, a better-balanced and socially more desirable national industrial pattern, possibly a national zoning plan for industry, and, through such industrial planning section, to lend encouragement and cooperation to industrial communities and regions in their efforts to improve the soundness and stability of their industrial structures.

(d) To prepare, in collaboration with state planning boards, the broad, general plan of a coordinated national transportation system directed toward an economically more effective and socially more desirable urban pattern and distribution of economic activities.

(e) To make a further inquiry into the probable effect on urbanization of the wider distribution of electric power.

(f) To establish a section for urban research which should perform for urban communities functions comparable to those now performed for rural communities by the Bureau of Agricultural Economics and Agricultural Engineering.

2. The Standard City Planning Enabling Act[5] should be revised to give official local urban planning agencies the same authority over projects in the areas within their jurisdiction which are constructed, authorized, or aided by any other local authority or state agency, as is provided for projects of their own local government. There should be included in such jurisdiction the proposals before state regulatory agencies over transport and utility matters when these involve the location, extension, or change in the use of facilities.

3. State legislation should be enacted in conformity with this revised Standard City Planning Enabling Act to permit the organization in all urban communities and metropolitan regions of an official planning agency vested with adequate authority effectively to guide and improve, through the instrumentality of a comprehensive city or regional plan broadly construed, the physical environment and social and economic conditions in these areas. Such state enabling legislation should give urban planning authorities effective powers over the quantity and quality of real estate subdivisions, and over the zoning of unincorporated areas in the urban regions. The functions of zoning agencies, where these bodies are separate, should be transferred to the official planning agencies.

4. A policy should be adopted by the Federal Government requiring that all Federal agencies submit to the official local planning body, if such exists, for its review and recommendation, the plans of all physical projects to be located in the area under the jurisdiction of such local planning body which are to be constructed, aided, or authorized by the Federal Government. These Federal agencies should consider such recommendations and should be guided in their actions by the same minimum requirements as apply under state laws or local charters to the local authorities. Included among the Federal agencies that are thus to submit their proposals to such local planning bodies should be the existing or future regulatory agencies for transportation and other public utilities when the proposals of these agencies involve the location, extent, or change in the use of facilities.

Modernizing Urban Government

To enable urban government effectively to discharge its increasing responsibilities, the Committee recommends that state laws and constitutions should be revised and amended in accordance with the most advanced practices in order to:

(a) Permit urban communities to exercise a wider range of home-rule powers not only over their own internal organization and management but also over the emerging problems of urban life;

(b) Permit a more flexible classification of cities, and an appropriate distinction between the wider powers essential to urban or metropolitan communities and the less extensive powers required by the remaining local authorities of the state;

(c) Facilitate the elimination in metropolitan areas of atrophied authorities like the township, and foster consolidation and cooperation among local urban governments.

Metropolitan Districts

In order to make the political and administrative structure of these metropolitan districts correspond more closely to their economic and social unity, and to solve the difficult problem of coordinating the activities of the great variety of independent authorities governing these urban areas, the Committee recommends that:

1. The Congress should pass legislation giving previous blanket consent to the adoption of interstate compacts enabling the several communities within the same metropolitan region but in separate states to deal jointly with the regional aspects of health, sanitation, industrial-waste regulation, the control of public utilities, planning, public safety and welfare, education, and other governmental functions of regional scope.

As an experiment, the Federal Government should cooperate with the states of Maryland and Virginia and make use of the unique opportunity to devise a complete scheme of integrated metropolitan government for the District of Columbia and the urbanized outlying areas within this metropolitan district.

2. Special legislation should be enacted by the states which would permit a reduction or federation or consolidation of overlapping and suburban authorities, easier annexation of territory to the city, joint services among neighboring cities through contractual relations, and intermunicipal cooperation in the conduct of metropolitan problems of all sorts.

[5] Prepared in 1928 by the Advisory Committee on City Planning and Zoning of the Department of Commerce.

Cooperation Among Municipalities

Because of the significant services now being made available to urban and other local governments by various state and national associations of municipalities and of municipal officials, the Committee urges governmental authorities on all levels, Federal, state, and local, to make the greatest possible use of the facilities of these associations.

Federal-City Relations

In order to clarify and formulate a Federal policy toward cities and to facilitate the administrative coordination of Federal services to cities, the Committee recommends that:

1. Immediate consideration should be given to the urgent necessity of coordinating both at Washington and in the field the related services and activities performed by the various Federal agencies operating in urban areas. A prompt and thorough study should, therefore, be undertaken by a division of administrative research in the Bureau of the Budget,[8] of the best methods and administrative techniques for bringing about the closer coordination of Federal activities in urban communities and for improving and facilitating collaboration between the cities and the Federal Government.

The Committee further recommends legislation creating a Federal credit agency authorized to make loans and grants under adequate legislative safeguards to state and local governments for the purposes of public-works construction, acquisition or construction of public utilities, land purchases, and similar capital outlays, and for extending credit to these governments in periods of economic stress. At the same time, the Committee believes that direct Federal expenditures in cities should be reduced to a minimum.

Taxation

Believing that there is urgent need for a thorough study of the whole structure of taxation, to allocate revenue sources properly and to bring them into relation with the functions appropriate to each level of government, the Committee recommends that:

1. A comprehensive and thoroughgoing inquiry should be made by the National Tax Revision Council or other suitable agency of the entire subject of conflicting fiscal policies and taxation as practiced by the local, state and Federal Governments. Special attention should be given to:

(a) The reconsideration of the policies which have resulted in arbitrary constitutional amendments or statutory limitations on the general property tax; and (b) the elimination of duplicate taxes and tax collectors.

2. Such state laws or constitutional amendments should be passed as will enable cities to exercise incidental and excess condemnation in order to protect public improvements and to facilitate their financing.

3. A thorough study should be made of the problem of special district assessments and the place of such assessments in the fiscal policies of the city. A study should also be made of the increment tax on real estate in lieu of special assessments, to see whether such a tax would make possible the financing of public improvements more nearly through tax revenue derived from the increased values which these improvements create, and whether such a tax would aid in combating speculation in land.

Urban Reporting and Research

In carrying out the task assigned to it the Urbanism Committee has been faced continually with serious shortcomings and gaps in the official Federal information concerning cities.

A.

The Committee believes that these deficiencies in the adequacy, consistency, and comparability of information about urban places can be and should be remedied. To this end it recommends that:

1. A division of urban information should be created in the Bureau of the Census which would serve as a central depository and clearing-house of all information about urban communities collected by all governmental agencies on all levels and by authoritative private organizations.

2. The Central Statistical Board, in the exercise of its present powers, should give special consideration to the above-enumerated inadequacies in the existing data and the shortcomings in the methods of collecting them.

This Board should draw up, in consultation with local public officials, their national associations, state leagues of municipalities, university research centers, and national research bodies, a program for extending and improving the reporting of urban statistics.

B.

With special reference to research in urban problems, the Committee recommends that a central agency for urban research should be established as a section in the proposed National Resources Board to perform for urban communities functions comparable to those now performed for rural communities by the Bureaus of Agricultural Economics and Agricultural Engineering. In addition to research of its own, the program of the proposed research agency should include the stimulation of urban research in universities, research institutes, planning boards, and the furnishing of advisory and cooperative services for individuals and public and private bodies.

The Great Cities of Tomorrow

The concentration of so large a proportion of the urban population in extremely limited areas is wasteful of resources, time, and energy. The same would be true of undue dispersion. The Committee believes that the most desirable environment for the urban dweller and for the effective use of human and material resources is more likely to be found somewhere between these two extremes.

The approach toward this type of urban community and a more satisfactory urban life will require much better appreciation and understanding of the city and its distinctive problems, greatly improved governmental organization and wider powers, and far more fundamental and much more effective planning on all levels of government.

[8] Such a division is suggested in the recent report of the President's Committee on Administrative Management.

Oil-Aggregate Surfacing on Stabilized Base for City Streets

By RUSSELL SNOW
Director of Public Works, Battle Creek, Michigan

CONTINUING a street-improvement plan adopted three years ago, the 1937 program of the city of Battle Creek called for the construction of seven miles of oil-aggregate surfacing on calcium chloride-stabilized base. The excellent performance record of 8¼ miles of streets improved by this method during 1935 and 1936 convinced us that such construction fills every requirement for average residential traffic.

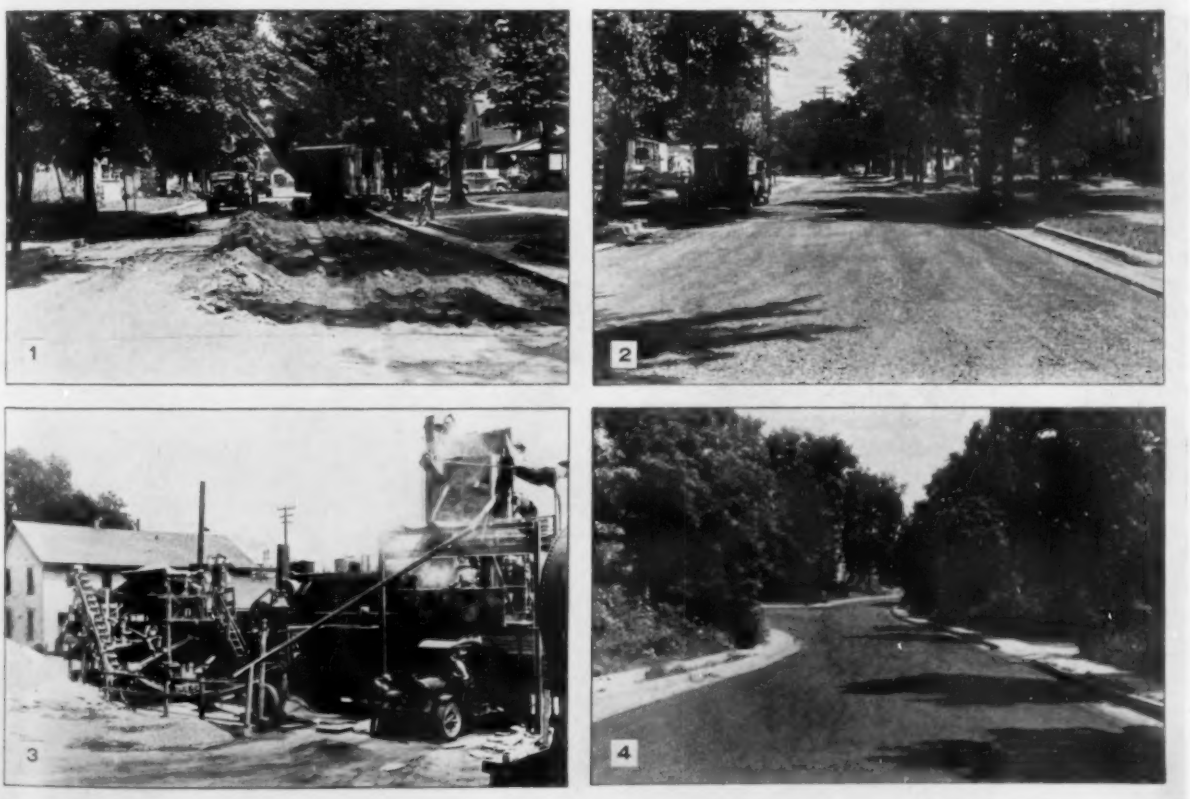
In the present program, the stabilized base construction is being performed by the contracting firm of Hudson and Horning, and the oil-aggregate surfacing by the city's own organization. All labor—common, semi-skilled and skilled, with the exception of a few equipment operators—is provided by the Works Progress Administration under the supervision of Harry Strong. A step-by-step account of construction operations will, we believe, give a clear picture of the procedure.

Preparation of Base

As the first step in the base construction, the existing streets are excavated to a depth such that the finished street will have a 4½-inch compacted stabilized base and a 2½-inch compacted oil-gravel wearing surface. The actual excavation varies from 8 inches to 3 feet. A 3-inch crown in the finished street is also maintained in the subgrade. The streets, incidentally, vary from 24 to 32 feet in width, and the contract calls for 45,000 cubic yards of excavation.

Specifications for the 22,000 cubic yards of stabilized gravel needed for the base course call for material meeting the specifications shown in the table on the following page.

The contractors were fortunate in locating a gravel pit near the edge of the city which contains sufficient binder



THE PROCESS OF BUILDING STREETS IN BATTLE CREEK, MICH.

1. Excavating an existing street prior to placing the calcium chloride-stabilized gravel base. 2. The stabilized base brought to grade and ready for the bituminous surfacing. 3. The city-owned asphalt plant. 4. Merwood Drive; the base gravel was placed eight and nine years ago, 2 inches of stabilized gravel was spread three weeks before this picture was taken, and the 2½-inch compacted oil mat was placed just six days before the picture was taken

SPECIFICATIONS FOR STABILIZED GRAVEL

Passing 1" sieve	100%
Passing ¾" sieve	70-80%
Passing No. 10 sieve	20-30%

Clay and silt percentage to be a definite percentage between 5 and 15, as directed by the city and to have a Plasticity Index between 5 and 12.

Material smaller than 40-mesh to have a Liquid Limit under 25 and a Plasticity Index of not less than 4 nor more than 8. Calcium chloride, at a rate of 12 pounds per cubic yard, to be included and mixed integrally with the soil-aggregates.

soil to meet the requirements. This pit-run material is processed in a gravel plant containing screens and a jaw-crusher, the calcium chloride being added at the prescribed rate to the delivery belt.

The material is then trucked directly to the streets, where it is dumped and spread by hand to a loose depth of 5½ inches. A motor grader is used to finish spreading to a uniform thickness, after which the mixture is thoroughly wetted and a surface application of calcium chloride made at a rate of ¾ to 1 pound per square yard. A 500-gallon water tank, mounted on a dump-truck, with sprinkler bar, is used for wetting.

We have found that traffic will compact the stabilized mat to its intended 4½-inch depth in most cases, but where traffic compaction is insufficient, a truck-drawn tamping roller is used.

Bituminous Surface

Within two to four weeks after the stabilized base is laid, it has consolidated sufficiently to permit placing of the 2½-inch compacted bituminous surface. As aggregate for the surface course, we use pit-run gravel, meeting the following specifications:

Passing 1-inch sieve	100%
Passing No. 4 sieve	60-80%
Passing No. 10 sieve	35-60%
Passing No. 40 sieve	20-40%
Passing No. 200 sieve	5-10%

Since pit-run gravel seldom contains sufficient fine material to take care of the last gradation in the specifications, we find it necessary and important to make up the deficiency through the use of a mineral filler. Our specifications for mineral filler call for 100 per cent passing a 30-mesh sieve, 80 per cent passing a 200-mesh sieve, and 20 per cent finer than 10 microns. The silica content of the filler is specified as not less than 65 per cent.

We consider the incorporation of mineral filler to be of the utmost importance, for in providing more surface area it allows the addition of more oil without bleeding; also, it reduces the amount of voids in the mix, thereby resulting in a more stable surface than could otherwise be obtained. Moreover, by reducing the void areas, the amount of moisture possible to be retained in the wearing surface is minimized and the chance of disintegration in freezing weather is practically eliminated.

Properties	
100 penetration asphaltic content	70-85%
Ductility of asphaltic content at 77 deg. F.	Min. 100 cm.
Soluble in carbon disulphide	Min. 99.0%
Flash point (open cup) deg. F.	Min. 250
Loss in 5 hrs., 325 deg. F.	Max. 8%
Furol viscosity, seconds at 140 deg. F.	250-550

All tests made by standard methods of the American Association of State Highway Officials.

From 4½ to 5½ per cent, by weight, of this oil is used in the mixture. We find that, by confining the oil content to the lower limit, a more stable mix is produced.

Asphalt Plant Operations

In our production operations, then, the pit-run gravel is hauled from the pit to the Cummer asphalt plant, which we have set up in our yard. This plant, with its 1,250-pound pugmill and 13-cubic-foot dryer, has a capacity of 400 batches in 12 hours. As the gravel reaches the plant, it is fed into a bin mounted over a ¾-inch vibrating screen, through which it is passed to remove the oversize. The oversize is crushed and passed back through the screen. From a storage bin located below the screen, the aggregate is fed by a screw conveyor, steam-operated, to the feeder conveyor in the asphalt plant. There it is heated sufficiently to have not over 0.5 per cent moisture, the temperatures from 180 to 225 degrees F.

Before it is discharged into the pugmill, the aggregate is weighed out on a beam scale, while the oil, heated to 150-185 degrees F. to facilitate mixing, is weighed on a dial scale for complete accuracy. The sacked mineral filler is dumped directly into the pugmill in correct proportion.

After the ingredients have received a thorough mixing in the pugmill, the mixture is dumped by gravity into trucks, for delivery to the streets. We find that 45 to 60 seconds will give a sufficient mix if the pugmill blades are in good condition. When the blades become worn, however, a longer mix is necessary.

Spreading the Material

Upon arrival at the street, the material is spread by means of an Austin-Western 77 grader, with dual-tandem drive wheel. An 8-ton Buffalo-Springfield tandem roller is used to compact the mixture, this operation being performed near evening, when the material has had time to cool, and again before sunrise the next morning. If the surface shows any signs of scuffing within a week or so after placing, it is rolled again.

In cases where good gravel streets exist, officials may be inclined to place the oil mat without adding calcium chloride to the base materials. This, we feel, is false economy, since the chemical performs a definite function in accelerating and furthering consolidation of the base, and its value will invariably show up in the service behavior of the surface course. Natural moisture from rains may keep the materials fairly well-bonded while the gravel road is used as an open surface. But when the base materials are covered with a bituminous mat, they are apt to dry out and eventually disintegrate, unless provision is made for keeping them in a moist and stable condition.

Where it is decided to use the existing gravel road as a base, we believe it advisable, and economical in the long run, to scarify to a depth of at least 3 inches, add 1½ to 2 pounds of calcium chloride per square yard, mix the materials thoroughly, and roll sufficiently to attain a good measure of compaction. Then the bituminous surface may be placed with least chance of base failure.

In addition to the 8¼ miles of oil-aggregate surfacing on stabilized base completed up to this year, the city employed the same method, in 1936, in the construction of 8,000 feet of runways at the W. K. Kellogg (municipal) Airport. This type of construction has proved very satisfactory for this purpose, as well as for street improvement.

Minneapolis Fire Losses Dropped in Face of Nation-Wide Rise

By EARL A. TRAEGER
Chief Engineer, Minneapolis Fire Department

THE fire loss in Minneapolis for 1936 was $783,000—$140,000 less than the loss for 1936. This is the lowest loss our city has had since 1913, and this is the first time since 1896 that fire losses in Minneapolis have been under a million dollars for three consecutive years. The per capita loss dropped from $1.90 to $1.59, a reduction of 16 per cent.

In view of the trend of increasing losses throughout the country, we can be justly proud of our continued success in still further reducing the loss record of Minneapolis. In spite of prediction of a rising cycle of increased losses, it is our intention to hold losses at a minimum, through efficient fire extinguishment and prevention. We propose to achieve this on the basis of a trained personnel and an adequately maintained and replenished supply of equipment.

5,192 *Alarms*

There was an increase in the number of alarms in 1936 over 1935, caused largely by drought, since grass- and bog-fires and bonfires numbered nearly 600 more than the same type of fire in 1935. False alarms were also on the increase, but the total of 309 for 1936 is still considerably below the five-year average. The Minneapolis percentage of 6 per cent compares very favorably with the average percentage of all cities, which has hovered around 20 per cent for several years. Alarms were received as follows:

Telephone	4,490
Box	428
A. D. T.	2,
Still	181
Personal service	68
Total	5,192

Of these alarms, 2,526 were for fires with no loss, 1,678 were for building fires with a loss, and 295 were automobile fires with a loss. Nine fires account for 28 per cent of the total loss. Special alarms numbered 24 2-2 alarms, five 3-3s, two 4-4s, 29 box alarms after still or telephone alarms. We have the Gamewell make of fire-alarm telegraph.

The most dangerous hours are of course from 8 A.M. to 10 P.M., and July registered the largest number of alarms—730 compared with a low of 270 in September and an average of 433 alarms per month.

Before discussing briefly company performance record and the amount of activity thus involved in handling these 5,000-odd alarms, I should like to call attention to the apparatus which we had available.

INVENTORY SUMMARY OF APPARATUS, AUTOMOBILES AND TRUCKS

		Gallons Per Minute	*Total Gallons*
Pumpers			
10	American-LaFrance (1919-22)	900	9,000
1	American-LaFrance (1928)	1,000	1,000
4	Buffalo (1935-36)	1,000	4,000
2	Four Wheel Drive (1929-30)	750	1,500
6	Four Wheel Drive (1931-32)	1,000	6,000
10	Pierce-Arrow	600	6,000
33			
Combination Engine Companies (Quads)			
3	Buffalo (1934)	1,000	3,000
Booster Pumps			
2	Pierce-Arrow (280-gallon tanks) and pumper (1924-29)	600	1,200
			31,700

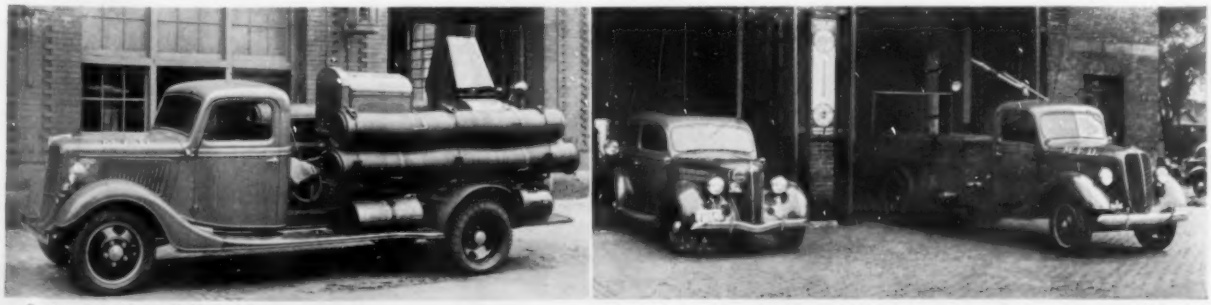
Ladder Trucks

1	American-LaFrance aerial truck (1921) and Pirsch tractor (1936)
3	Pirsch aerial trucks and tractors (1932-35)
1	Seagrave aerial truck and tractor
4	M. F. D. service trucks (1922-28) and American-LaFrance tractors (1916-21)
3	M. F. D. service trucks and Pierce-Arrow tractors
12	

Miscellaneous

1	Squad wagon, American-LaFrance
1	Squad wagon (1934), Diamond "T"
2	Hose wagons (1935), Ford
1	Smoke extractor (1935), Ford
1	Water tower (1913), Nott
2	Hose wagons (1924-25), Pierce-Arrow
1	Foamite (1926), Pierce-Arrow
1	Hose wagon (1936), Pirsch
10	
23	Automobile and service trucks (1929-36)

Our 33 companies made 12,113 runs for a total of



Courtesy of the Ford Motor Co.

SMOKE EXTRACTOR, AND A CHIEF'S CAR AND HOSE WAGON WITH MOUNTED NOZZLE

24,900 miles, were in service 3,680 hours, laid 726,300 feet of hose, and raised 71,282 feet of ladders. Of the 19,238,101 gallons of water used, 12,410,000 gallons was supplied by six of our 21 engine companies, not including the quads. Hose company No. 4 took out 1,541,330 gallons of water, compared with an average of 35,330 for the other five hose companies. The water tower was called out once and was in service 10 minutes.

DIAMOND T SQUAD CAR

Our rescue squad made the highest number of runs, 581 for 1,220 miles. It treated 123 patients, reviving 81 of them. The principal emergencies were as follows:

	Patients	*Revived*
Illuminating gas	39	22
Poisoning	23	16
Carbon monoxide	14	9
Drowning	9	1
Heart trouble	8	4
	93	52

In addition, companies equipped with inhalators treated 89 and revived 61. We use H-H inhalators, MSA All-Service gas masks (Burrell type) and Gibbs and McCaa oxygen-breathing apparatus.

FOUR WHEEL DRIVE PUMPER

Apparatus and Equipment

New equipment acquired during 1936 included, among other items, the following:

1	Buffalo 1,000-gallon pumping engine
1	Pirsch hose truck
1	Pirsch aerial ladder-truck tractor
1	Ford V-8 sedan, Fire Prevention Bureau
1	Ford V-8 coach, Chief's car
12,000	feet fire hose
1,000	feet chemical hose
1,000	feet fire-extinguisher hose
12	vapor stream shut-off nozzles
12	two-way wyes "Siamese"
3	Baker cellar pipes
1	rocker lug "Siamese"
25	salvage covers
16	"Lights from Mars"

BUFFALO 1,000-GALLON PUMPER

Northwest Fire School

We have kept up both training and equipment strength. With reference to the former, in addition to our own training schools, the Ninth Annual Northwest Fire School convened early in August under the auspices of the League of Minnesota Municipalities, the Division of Insurance of the State of Minnesota and the University of Minnesota. Nearly 100 cities and villages of Minnesota, Wisconsin, the Dakotas and Illinois were represented, with a registration of more than 200.

This Year and Next

I have stated our work for the full year of 1936. Thus far in 1937 the satisfactory record has been maintained. Indications are that the fire loss will be slightly under the 1936 figure.

The inventory of land, buildings and equipment has a valuation of $1,426,972. Station and fire-alarm equipment accounts for $311,110; apparatus, $337,368; fire hose, $78,000 for 3,795 feet of ¾-inch chemical hose, 28,659 feet of 1½-inch, 76,871 feet of 3-inch, and 163 feet of 3½-inch hose. There are 594 fire-alarm boxes; 7,501 hydrants; and 843.53 miles of water mains. Expenses in 1936 totaled $1,201,729, or $2.44 per capita, of which $2.27 was for salaries for our 500 men.

In August, the balance, or 40 per cent, of the salaries lost through payless days in 1932 and 1933 was paid the department members, 60 per cent of the salaries thus lost having been paid in 1935. Also, effective September 1, 1936, all salaries were restored to the schedule enjoyed prior to June, 1932, when it was found necessary to reduce the salaries of employees under City Council jurisdiction. This favorable adjustment of salary conditions is naturally most gratifying and cannot fail to exert a pronounced influence on the morale of the personnel.

PIRSCH 85-FOOT AERIAL

During 1937, we have purchased 1 Buffalo 1,000-gallon pumper; one Pirsch 85-foot aerial ladder truck; two Homelite portable pumps; and five Homelite portable lighting plants.

The City's Place in the Nation's Destiny

THE city has seemed at times the despair of America, but at others to be the nation's hope, the battleground of democracy. Surely in the long run, the nation's destiny will be profoundly affected by the cities which have two-thirds of its population and its wealth. There is liberty of development in isolation and wide spaces, but there is also freedom in the many-sided life of the city where each may find his own kind. There is democracy in the scattered few, but there is also democracy in the thick crowd with its vital impulse and its insistent demand for a just participation in the gains of our civilization. There is fertility and creation in the rich soil of the broad countryside, but there is also fertility and creativeness in forms of industry, art, personality, emerging even from the city streets and reaching toward the sky.

—From the report of the Urbanism Committee of the National Resources Committee, significant recommendations from which will be found on pages 53-56 of this issue.

Snow Plowing and Removal in St. Paul

By GEORGE M. SHEPARD
Chief Engineer, Department of Public Works

SNOW plowing and removal for a city in the latitude of St. Paul is a major public works operation. It includes not only the plowing of snow on the entire usable mileage of streets for a period of from three to four months each year, but also the loading and hauling away of snow and ice from the business streets, the removal of snow from bridges, the removal of icy ruts, the cindering or sanding of hills and street intersections, and the opening of catch-basin inlets. Frequent deliveries of coal and fuel oil, together with the necessity of access for fire protection in the outlying districts of the city, make it imperative to plow all streets on which it is physically possible to operate a snow-plow, whether such streets are graded or not.

Although occasional snowfalls occur before and after these dates of each year, the principal period of snow operations is from December 1 to March 15. Snowfall varies from 15 to 80 inches during the winter season, and for the last ten years has averaged about 40 inches, of which an ordinary maximum snowfall may be taken at 8 inches.

Snow plowing and removal operations are under the direction of the Commissioner of Public Works. The operating force is recruited from the city street-maintenance and street-cleaning personnel regularly employed during the remainder of the year, thus giving practically continuous employment to crews entirely familiar with the streets of the city and skilled in the operation of the equipment required for the work. The force is further supplemented by common labor obtained through the City Civil Service as required. The operation is directly in charge of the Assistant Chief Engineer of the Department. Other engineers and the administrative staff of the Sanitation and Municipal Equipment Bureaus complete the supervisory force. The conditioning and operation of equipment is done by the Municipal Equipment Bureau. The work is carried on as a city-wide operation from a central office in the Municipal Equipment Building, this "snow office" being in charge of responsible persons who are on duty day and night.

Snow Plowing

As snow-plows are dispatched, each driver is equipped with a typewritten schedule of the streets to be plowed. For primary streets a fixed order of plowing is required, while on the secondary streets a section or area is given, but through practice the same order of streets is generally followed. Each plow is manned by an operator and one helper. The plow operators are dispatched from the central office and are required to report progress by telephone at intervals. Plowing on the primary routes is begun as soon as the snowfall reaches about 4 inches. The snow is plowed as close to the pavement or street surface as possible, the plows being set to clear at about one inch. Where successive or light, dry snowfalls occur and the crust on the street breaks up, the streets are occasionally given a plowing for the purpose of moving the loose material to the sides. A large "V" plow, mounted on a four-wheel-drive truck, is found to give satisfactory service for opening up drifts on roadways and narrow streets in the outlying portions of the city. Snow-fences are utilized in the unimproved outlying districts to localize the drifting at a distance from the roadway. Batteries of two or three plows are operated in echelon, three plows being used on the wider streets, generally completing the plowing operation in one trip on each side of the street. On the narrow secondary streets, one or two plows are used as required. A special gas truck is kept on duty to supply units in the field with gas, oil and incidental supplies. Towing service is also kept available for bringing in equipment requiring repairs.

The following typical example of the snow-plowing operation is given. On February 26, 1936, 7 inches of snow fell in the 12 hours between 7:00 A.M. and 7:00 P.M.

City of Saint Paul
Department of Public Works

DAILY SNOW CLEANING COST REPORT

Date ... February 10,1937...
Weather ...

Inches of Snow Fall ... This date ... 10... Total month to date ... 9.4 ... 16...

CINDERING		
Labor	128.90	
Hired Trucks	139.00	
City Equipment	4.80	272.60
PLOWING		
Labor	760.78	
Hired Trucks		
City Equipment	835.95	1,606.73
SNOW REMOVAL		
Labor	264.71	
Hired Trucks	51.00	
City Equipment	218.95	519.66
BRIDGE CREWS		
Labor	93.54	
Hired Trucks		
		93.54
SALARIES		27.47
PURCHASE ORDERS AND ID INVOICES		
TOTAL THIS DATE		2,519.90
PREVIOUSLY REPORTED		7,075.26
TOTAL COSTS THIS MONTH TO DATE		9,595.06

Remarks:
Cleaning off 4 inch snow fall on 7th and 8th of February

Compiled by

Verified and approved by
Jos. Perlich

THE DAILY SNOW-CLEANING COST REPORT FORM USED IN ST. PAUL, MINN.

Plowing began at 3:00 P.M. after 4 inches had fallen and continued throughout the night so that on the following morning all primary streets had been plowed and some of the secondary streets opened. Along with this work, crews were employed throughout the night in loading and removing snow from the downtown business district. In a snowstorm of this extent two nights are required to effect complete clearing of the business district, and two or three additional days to plow and open up all secondary routes.

In January, 1937, 12.5 of measurable snow fell, according to the Weather Bureau records, the various snowfalls being distributed but nevertheless requiring plowing at two separate times. During this month 1,500 miles of streets were plowed, using a total of 2,478 plow-hours, the cost, including all items, being $5.65 per mile of street.

Snow Removal

The operations of snow loading and removal in the loop and business districts is organized on a day-and-night basis, the mechanical Sno-Go loaders, which load directly into trucks or trucks and trailers, operating mainly between midnight and 7:00 A.M. The parking of cars on streets in the loop district presents a difficult problem for either hand or mechanical removal of snow. At the best, mechanical loading can be carried on only from midnight to about 8:00 A.M. The radio is used to broadcast information as to streets to be cleaned, with a request that no cars be parked on these streets after midnight. The police cooperate to the fullest extent in the enforcement of these regulations, and where cars do remain on the street they are hauled by tow-trucks to another area.

Delinquent shoveling of sidewalks following the mechanical removal of snow in the loop district has increased the cost of removal of snow considerably, in some cases a second operation being required. This coming year it is contemplated to plow certain of the sidewalks in the loop district a short time in advance of the snow removal so as to eliminate a second operation. It is necessary that snow from the business districts be removed within two or three days after falling, otherwise it becomes compacted to such an extent that a mechanical loader will not remove it. Bridges are plowed along with the streets on any given route, actual removal of snow from the bridge roadway and sidewalks being accomplished either by loading or by throwing the snow over the bridge railing. Hand labor is required for the loading of snow at intersections and inaccessible places as well as for the opening of catch-basin inlets and for emergency removal of ruts. While a comparison of the cost of loading by hand or machine shows up very favorably to the machine, there is in addition the factor of speed required in cleaning a business district, and this, with the limited funds available, can be accomplished only by mechanical means. During the month of January, 1937, snow was removed to the full width of the roadway for a total length of 35 miles in loop and business areas, the cost of this work per mile being approximately $140.

Disposal

Where snow is loaded for removal, it is disposed of either by dumping into snow chutes which drop the snow into existing sewers having a heavy flow, into the back channel of the Mississippi River through openings in one of the bridges; or into vacant lots which are accessible and where sufficient area and capacity is available. Garbage trailers hauled by 5-ton trucks are used to supplement the smaller trucks. The trailers can be used only where it is possible to successively dump from the side.

Equipment

Of city-owned equipment, the following items are available: four large motor patrols; four scarifying blader machines, which operate as a unit with 10-ton tractors; one new style "V" plow with four-wheel drive trucks; sixteen dump-trucks equipped with removable blade plows; seven oil distributors equipped with removable blade plows; and four street flushers equipped with removable blade plows. In addition, there are two Sno-Go mechanical loaders operating as previously described. Where necessary, this equipment is supplemented by rental from private sources. City-owned trucks are used when available in hauling away snow, and are supplemented by rented trucks.

Appropriations and Cost Records

Funds are provided for snow removal in the regular city budget prepared by the Comptroller and approved by the City Council each year for the following year. Although the available annual net expenditure for snow removal during the past six years has averaged over $60,000, only $37,000 of budget funds has been provided and the balance made up as an emergency authorization as the necessity arises. Emergency appropriations are consequently required each year except in years of extremely light snowfalls. The cost of the removal of snow from the street-railway tracks is charged to the St. Paul City Railway Co., although where it is possible for the Street Railway Co. to operate its large plows, a cooperative arrangement is sometimes worked out. With the limited appropriation available, it is necessary to keep an accurate up-to-date cumulative cost record. A typical sheet of such a daily report is reproduced herewith. New equipment is purchased by the Municipal Equipment Bureau through its revolving fund. A rental charge is made against the snow-cleaning fund for all city equipment used. Before the season begins, a schedule of rental charges is set up for the various types of equipment, and these charges are made against the fund from day to day. The rental charge is sufficient to cover depreciation and repairs, the depreciation charge being sufficient to provide for replacement of equipment. At the end of the season, a check is made of the accumulated rental charges, and, if necessary, adjustments are made for the succeeding year's operation.

Ice Control

While snow plowing and removal is the first consideration, the control of ice is becoming of equal importance. We find that, irrespective of how close the surface is plowed, there remains an inch or two which compacts into an icy covering and is extremely slippery when sleet or light snow follows. When this covering of packed snow becomes thicker or heavy wet snow falls and freezes before it can be plowed, traffic will quickly cut deep ruts. The only possible way of relieving this situation is the

expensive one of using heavy tractor or motor patrol equipment with scarifying teeth, the ice being broken up and bladed to one side.

It is particularly necessary to protect icy surfaces on grades and at street intersections, and the only feasible means of combating this ice is by the use of cinders, sand or other abrasive material. Cinders have been found to be much more satisfactory than sand, although it is becoming increasingly difficult to secure cinders satisfactory for this purpose, on account of the substitution of pulverized fuel and natural gas in the large industrial plants for lump coal or screenings. Cinders are collected throughout the year and are crushed and screened at a central yard before

Summary

Our experience indicates the following to be necessary for efficient snow plowing and removal:

1. Experienced organization.
2. Sufficient plowing equipment, including spare equipment for substitution during repairs, to permit the entire street mileage to be plowed before the snow compacts under traffic. Heavy equipment to remove ruts if necessary.
3. Sufficient mechanical loading equipment and trucks to clean loop and other business districts of snow quickly.
4. Sufficient hand labor and trucks for cleaning intersections, inaccessible places, opening catch-basins, etc.

SNOW PLOWING AND REMOVAL EQUIPMENT AT WORK IN ST. PAUL

1. Large V-plow mounted on a Four-Wheel Drive truck working in an outlying section of the city. 2. A Sno-Go loading snow in the business district. 3. A Snow-Go loader operating at the municipal airport. 4. A blade plow mounted on a street flusher

and during the winter season. The cinders are distributed to various points throughout the city, with smaller stock piles made at available places along the street so as to be ready for use. About 75 pounds of calcium chloride per cubic yard of cinders is mixed with the cinders before stock piling. The calcium chloride aids the cinders in anchoring when applied to icy surfaces, and during the period of storage does not lose its properties.. In general, cindering operations are carried on by means of small trucks with two men on each truck spreading the cinders lightly by hand. During the month of January, 1937, approximately 2,900 cubic yards of cinders were crushed, loaded and spread on icy streets throughout the city at a cost of $6.608.

5. Men, trucks and cinders for cindering operations, this item now amounting to one-third or more of a total season's cost for snow plowing and removal.

Irving C. Pearce is Commissioner of Public Works. J. R. Johnston, Assistant Chief Engineer; George M. Garen, Assistant Superintendent of Construction; Arthur H. Koch, Superintendent of Equipment, and Fred Driver, Superintendent of Sanitation, supervise snow-removal operations.

You may quote freely from
THE AMERICAN CITY,
but please give credit.

Machine-Receipted Bills Are Paid Bills

By NEIL BLONDELL
Assessor and Deputy Clerk, Grosse Pointe, Mich.

GROSSE POINTE, population 6,000, is a next-door neighbor to Detroit, and we have attempted to apply some of the metropolitan spirit to our own municipal office.

For example, in 1934, when Grosse Pointe became a city, we laboriously made up four separate tax books, two for the city and two for the county of Wayne. The following year we combined the city and county rolls, making only two tax books necessary.

In 1936 a new filing system eliminated the writing of a complete assessment record each year for the city. A permanent unit assessment card is now filed and indexed for each piece of property. This card provides space for recording city and county tax information for a period of ten years, and shows at a glance the exact status of tax arrears against the property.

Careful design of forms has further reduced duplication of effort. County and city tax bills are both addressed at one writing through the use of snap-out carbons, and a similar plan is used for addressing the quarterly water bills for the entire year at one writing.

THE AUTHOR AND A MACHINE-RECEIPTED BILL

Up to this year we were still faced with a problem that confronts a great many tax-collection offices—the problem of protecting the taxpayer's dollar against errors and possibility of defalcations in handling payments.

More than 10,000 items pass through this office for payment during the year. With 2,500 units of property, there are approximately 6,000 city and county tax bills (including half-payments), and some 6,000 water bills, plus the various other fees and licenses, to be accounted for.

Formerly when payments were made on tax notices, water bills, permits and other fees, we followed the common procedure of stamping the bill and stub PAID, returning the bill to the customer and retaining the stub as a posting medium.

Recently we installed a Burroughs window machine that provides a fast, simple, efficient method of receipting tax and other payments. The only operation necessary to receipt a bill is to insert the form in the bill chute, and enter the amount of the bill on the machine. The machine not only certifies the amount paid but also automatically prints the date and an identifying serial number on the bill.

In receiving payments, either at the window or through the mail, we have a triple visible check as a guard against errors. There is (1) the amount we are supposed to collect, plainly printed on the bill; (2) the amount, money or check, received in payment; and (3) the amount certified on the bill by the receipting machine. All three amounts must be equal, and this can be ascertained at a glance.

This triple visible check-up prevents many errors, but because of the human factor they still arise occasionally. Under the old stamp receipting method, these mistakes were very difficult to trace. With machine certification, if the amount certified on the bill does not agree with the total due, we know that an error has been made. This method of receipting is especially important on city tax bills, which can be paid either in full or in two half-payments.

All types of bills can be receipted on our window machine, and we have designed our forms to facilitate handling. Besides tax payments and water bills, we use machine certification on such income sources as plumbing permits, electrical inspection fees, water and tap permits, building permits, dog license fees, traffic fines, court costs, and on sundry other items.

In fact, every income transaction is handled over the tax-receipting machine. As payments are made and receipted, they are recorded on the machine's locked-in detail tape. This tape shows not only each receipt issued, but all other machine work performed, such as additions and miscellaneous figuring. The tape is filed away each day and is a valued journal for reference when audits are made.

As payments are receipted, the amounts are automatically accumulated in the machine, and at the end of the day a locked-in total is available, against which the cash in the drawer must balance. This figure is accessible only to the person authorized to retain the key, which unlocks the total key on the machine.

A New City on an Island

By PAUL CONANT

ON a site reclaimed from the shoals of the bay between San Francisco and Oakland, a new American city is rising. This $50,000,000 city, scene of the Golden Gate International Exposition in 1939, will become a city of fantasy and wonder. Yet in spite of its impermanent nature, this new municipality is being designed along the most advanced principles of municipal engineering.

For the comfort of 20,000,000 visitors expected during the 288 days of the 1939 World's Fair, Treasure Island is being scientifically planned by a corps of experts. Because of the isolation of this virgin site, engineers are able to put novel theories into execution.

In the construction of the site itself more than 20,000,000 cubic yards of fill were dredged from the bottom of San Francisco Bay in building the 400-acre island. A total of 287 tons of rock were placed in the 17,760-foot seawall protecting the site and the causeway.

Facilitation of Traffic

In planning the site, accessibility was the first consideration. As Treasure Island is to be used for a new San Francisco municipal airport at the close of the Exposition, consideration had to be given to the ground transportation of future air passengers. Situated within 2½ miles of downtown San Francisco, the site promises to be the closest-in airport of any large municipality in the world.

To handle the volume traffic during the Fair, which is expected to reach a peak of 50,000 an hour, or 250,000 a day, a ferry line will be operated between the island and San Francisco. A ferry terminal and four ferry slips are already under construction. For automobile traffic and for future use by the airport, direct road connections have been made with the mainland by means of a 900-foot causeway to Yerba Buena Island and thence via the San Francisco-Oakland Bay Bridge to the mainland.

For the heavy traffic during the Exposition, a six-lane 64-foot Class A highway will be built, 7,600 feet in length with five separate branches. Only three of these six lanes, with a width of 34 feet, will be part of the permanent system of the airport. The permanent section is designed for H-15 loading, and the temporary section has an H-10 rating. In order to eliminate left-hand turns in either direction across the Bay Bridge, this highway will connect with both the east and the west portal of the bridge tunnel. A system of underpasses and overpasses will allow ferry passengers to enter the grounds without crossing traffic. A parking lot for 12,000 cars will be provided.

To accommodate small craft, a yacht harbor lying between Treasure Island and Yerba Buena Island has been dredged to a depth of 35 feet. This harbor, measuring 3,420 feet long by 1,500 feet in width, will have berthing facilities for more than 200 craft in addition to two huge landing stages. Later it will be used as the seaplane basin for the new airport.

Architectural Treatment

In laying out the buildings, architects were faced with the necessity of combining both temporary and permanent structures into one harmonious scheme. The architectural treatment of the steel-and-concrete hangars, measuring 287 x 335 feet each, and of a three-story concrete passenger terminal, was necessarily limited by the engineering principles involved. The hangars, now completed, of the

TREASURE ISLAND, SITE OF SAN FRANCISCO WORLD'S FAIR

Two hangar buildings shown 95 per cent completed, yacht harbor in foreground, dredge in background

hinged arch design with walls cantilevered outside the lower arch pins to to counterbalance the weight of the roof, were designed by the Exposition engineers under the direction of John J. Gould, chief structural engineer.

One of the main problems of the architects was to create a design which would harmoniously admit great masses such as the hangar structures and exhibit palaces, measuring 200 feet in width and from 400 to 900 feet in length. This was accomplished by a series of courts, gardens, and towers between the masses. The front elevation will be broken up by two main gates whose towering portals cut deep recesses into the horizontal of buildings. Architecturally, the structures represent a new type of design called "Pacific," a combination of influences from both the occidental and oriental shores of the Pacific. Temporary edifices now in the process of construction include six exhibit palaces, four pavilion buildings, and the 400-foot central tower, the architectural keynote of the Exposition.

Included in the plans for beautifying the grounds is a $1,500,000 landscaping program. More than 4,000 trees, 70,000 shrubs, and 700,000 flowering plants will be transplanted as part of this program. A system of lagoons, canals, and fountains will lend additional beauty to the plan.

Fire Protection and Water Supply

From the standpoint of municipal engineering, perhaps the most interesting phase of this $16,000,000 construction project is the fire-protection and domestic water-supply system. Main connections will be made with the San Francisco municipal system and the water piped across the bridge to a 3,000,000-gallon reservoir on Yerba Buena Island. The pumping station at the base of one of the bridge piers will have a capacity of 3,350 gallons per minute. Slip joints between towers, and four flexible expansion joints in each tower, will allow for a maximum expansion movement of 30 inches in the 10-inch steel pipe.

Consumption estimates based on the data of previous world's fairs are figured at 23.4 gallons per capita of attendance per day. The average daily demand is figured at 1,800,000 gallons, and the maximum demand without fire protection at 3,500,000 gallons, and with fire protection at 8,000,000 gallons per day. About 200 hydrants will be scattered throughout the grounds. The 260-foot elevation of the reservoir will give a hydrant nozzle pressure of 100 pounds per square inch with a fire flow of 5,000 gallons per minute in a concentrated area. A manifold will be installed at the seawall for salt water connection in case it becomes necessary to call upon the municipal fire-boats. Check-valves will be installed to prevent pollution of the whole system in such an emergency. A series of shut-offs will be installed for use in case of breakage to mains or hydrants. This system, which includes approximately 113,000 feet of mains, ranging from 6 to 12 inches, was laid out by Exposition engineers under the direction of Charles H. Lee and by the Public Utilities Commission of San Francisco.

Electrical Installations

William R. Van Bokkelen, head of the division of electricity for the Exposition, will have charge of all electric installations, which will include wiring for 40,000,000 kwh consumption during the 288 days of the Fair. Three 9,000-foot cables will bring power to a 16,000-kw substation on the island. Distribution will be made by 10 miles of underground three-phase feeder circuits, 25 miles of street-lighting cable, and an unestimated amount of secondary cable. Exterior and interior lighting effects will be worked out by the General Electric Company.

All construction work in this 400-acre project is under the direction of W. P. Day, Vice-President and Director of Works for the Exposition.

SEE THE FRONT COVER

The photographs on the cover of this issue portray: (top) the causeway approach from the San Francisco-Oakland Bay Bridge at the left; the administration building, first to the right of the roadway; the main entrance, half-way up the boulevard; the ferry terminal beyond the entrance; two airport hangars which will serve as exhibit palaces, at the extreme right; the Lake of All Nations behind the hangars; the 400-foot Exposition tower as the central unit; (center) the tower and landscaping; (bottom) Treasure Island in the center; San Francisco-Oakland Bay Bridge, left foreground; and Golden Gate Bridge in the background.

Requirements of an Ideal Park System

CONCLUSIONS from a paper on "The Park System," by Robert H. Mattocks, in *The Town Planning Review*, of Great Britain, July, 1937:

The aim of the designer of the park system should be:

1. To bring the largest possible number of homes within easy reach of an open space.

2. To connect the open spaces by such pleasant routes that people will be tempted to walk farther and see other parks.

3. To give pleasant walking ways from the town center, or near its center, to the open country.

4. To make sure that the open spaces are seen, if they have any esthetic value at all; playgrounds for intensive use may be partially hidden behind buildings sometimes, but the economy which results in buying only rear land for parks robs the town of half the value to be obtained from them. A citizen will pass a park a dozen times or more for every trip he makes into it, and the pleasure he might have got on the dozen trips is lost when the park is hidden by buildings.

5. To place the playgrounds in such a way that the approach from the homes of the children shall be as safe as possible.

6. To keep a due proportion between the types of open space and to cater for the needs of the particular type of population to be served; also to keep the amount of open space, so far as existing conditions allow, proportioned to the number of persons served.

7. There should also be a four-fold aim in regard to amenity:

(a) To save existing amenity whether in the form of beauty-spots or fine groups of trees;

(b) To restore lost amenity by covering up the débris left by mines, quarries, and derelict industries;

(c) To create beauty on uninteresting sites and to impart as much of it as is consistent with good usage even into such unpromising features as children's playgrounds and recreation parks;

(d) Narrow park strips may be used to form breaks between two types of use zones or to cut off an existing development of a poor type, and make a better type of development possible beyond the break.

Half of Chicago's Vehicles Had Multiple Defects

First Report from Largest City Having Motor-Vehicle Inspection

By EDWARD J. KELLY
Mayor, Chicago, Ill.

COMPULSORY motor-vehicle inspection was instituted in the city of Chicago in 1936. Records of our City Clerk's office showed that we should have to make provision for inspecting 475,000 passenger cars, 35,000 light trucks (1-ton), and 25,000 heavy trucks, a total of 535,000 vehicles.

On the basis of half these vehicles being rejected on first inspection, equipment was purchased to handle 300,000 vehicles, at the rate of 45 inspections per hour for passenger cars and light trucks, and 30 inspections per hour for heavy trucks. There were 12 light-duty lanes and 6 heavy-duty lanes. A personnel of 250 men was selected a month in advance of opening and was trained at the first lane to be equipped.

The lanes were opened for vehicle inspection on July 1. Meanwhile press and radio had kept the public informed of the progress made in preparing for compulsory inspection, with the result that at each lane there was a long line of cars ready to undergo the first official test established in Chicago. Of 6,942 vehicles inspected, 2,857, or 41.2 per cent, were rejected. During the month, out of 214,256 inspections there were 74,907 rejections and 139,349 approvals, the rejection average being 34.9 per cent.

In August, when six lanes were opened for night operation, the interest of motorists in vehicle inspection was stimulated to a most gratifying degree. The peak in the number of inspections was on August 8, when the lanes accommodated 13,113 vehicles.

During the entire period from July 1 to December 31, there were 741,541 inspections made, with 477,541 approvals and 263,997 rejections. The average percentage of rejections over the period was 35.6.

There was a decided fluctuation in the number of vehicles inspected from month to month. The first high peak, early in July, was caused by the novelty of lane operation, widespread publicity and the natural interest of a large number of motorists anxious to comply with regulations and make sure their vehicles were in proper condition. The second peak occurred in August, when six of the lanes were opened for night operation. The third peak was in September, a result of the newspaper warning that September 1 would be the official deadline for vehicle inspection. Many more vehicles reported at the lanes during fair weather than when stormy.

Inspection revealed that many vehicles had more than one mechanical defect; some had even five or more. The following is a breakdown of rejection causes and percentages, showing that out of a total of 263,997 cars rejected, 111,168, or 42.1 per cent, were found to have faulty brake equalization. This figure was more than twice as great as that for the second highest rejection cause, which was defective stop lights. Next in order in the list of rejection causes were brake effort, headlights, and wheel alignment.

Item Rejected	Total Rejections This Item
Brake equalization	111,168
Stop lights	51,576
Brake effort	48,292
Low headlights	44,921
High headlights	43,173
Wheel alignment	37,171
Lens	27,164
Hand brake	24,679
Brake pedal	22,378
Parking lights	18,012
Tail-light	17,445
Headlights out	11,344
Dim lights	10,301
License plate	8,773
Steering	8,091
Windshield wiper	7,059
Mirror	3,209
Clear vision	3,119
Horn	2,992
Muffler	2,100
Trailer brake	162
Total	503,129

Eliminating Defective Automobiles

One of the early objectives of Mayor Edward J. Kelly's Keep Chicago Safe Committee was a plan for eliminating all automobiles with mechanical defects. With the committee's backing, an act was passed by the Illinois General Assembly authorizing cities of 40,000 or more population to require, by ordinance, the semi-annual inspection of motor vehicles. In Chicago the Vehicle License Bureau, under Commissioner Thomas S. Gordon, was named the enforcing agency for vehicle inspections, and the Chicago Park District took over the physical operation of the lanes, with Otto K. Jelinek, traffic engineer, in charge until last January, when the open lanes were replaced by three protected lanes, and the city took over the work from the Park District. This article describes the organization developed for operation of the lanes, together with the actual method of operation, recommendations for future activity, and facts which will aid other cities contemplating a similar operation.

Let's Look at the Accident Record

In the last six months of 1935 there were 2,680,560,000 car-miles driven in the city of Chicago; during the latter

half of 1936, the total reached 3,288,990,000 car-miles, an increase of 608,430,000 miles, or approximately 23 per cent. It would be logical to assume that there would be a proportionate increase in accidents, personal injuries and deaths. *Records show that accidents and resulting injuries and deaths per million car-miles driven were sharply reduced in the 1936 period.* It is believed that this reduction was largely due to the various agencies active in the field of safety, of which compulsory vehicle inspection was one of the most prominent. The figures were:

	Last 6 Months 1935	Last 6 Months 1936
Total accidents	8,716	9,850
Total personal injuries	10,107	11,573
Total deaths	425	430
Car-miles	2,680,560,000	3,288,990,000
Accidents per million car-miles	3.25	2.98
Injuries per million car-miles	3.77	3.52
Deaths	.159	.130

On July 1, 1936, a total of 471,161 motor vehicles were registered in Chicago, and 521,247 on December 31. At the close of the six-months period, the number of vehicle inspection approvals had reached 477,544, or 91 per cent of the total registrations. This gave proof of almost universal acceptance by motorists of the inspection idea, a broad general observance of state and city regulations governing vehicle inspection, and the effectiveness of enforcement measures employed. The cost of the 741,541 inspections was 42 cents per inspection.

In addition to the correction of mechanical defects in motor vehicles and the resulting elimination of unsafe vehicles from the streets of Chicago, the operation of the safety lanes created a feeling on the part of the public that accidents are less likely to happen if vehicles are properly maintained.

National-Urban Preparedness

IN the Foreword to its monograph "Our Cities—Their Role in the National Economy," published last month, excerpts from which comprise the leading article in this issue, the National Resources Committee makes a strong plea for national-urban preparedness to meet future insecurity and unemployment:

"A policy of urban national preparedness would place city and nation in better position to deal swiftly with industrial emergencies, and prevent the serious delays lately caused by new and sticky problems of public works projects, tardy relief measures, and irritating legal and financial conflicts about systems of taxation and finance. The cost of delays in such crises is not adequately measured by dollars of expenditure alone, but it is felt in the crippled consuming power of the city, the consequent reaction on the whole nation, and in the distress of millions of men, women, and children in the city and on the farm as well. The parallel of the "ever normal granary" in the agricultural zone is the reserve of public credit, public works, and relief ready for use in the urban-industrial area when the drought comes. Ways to set up such national-urban preparedness are indicated here in the main report. . . .

"There are many signs in the sky that may be construed to forecast a day of hope, in which our sprawling cities may find better patterns of community structure, wiser plans and programs of action, and higher levels of material and spiritual prosperity. The municipal history of the past generation, if scarred and terrifying here and there, is not without its triumphs in human achievement. The city has its own forms of magnificence, its own broad sweep of grandeur, its own shrines and temples of science and art, its own life ways—many of them priceless in value to personality and to society. "I am a citizen of no mean city" is an ancient, yet modern, phrase, echoed by many who love their town.

"The prosperity and happiness of the teeming millions who dwell there are closely bound up with that of America, for if the city fails, America fails. The nation cannot flourish without its urban-industrial centers, or without its countryside; or without a sound balance between them. City planning, county planning, rural planning, state planning, regional planning, must be linked together in the higher strategy of American national planning and policy, to the end that our national and local resources may best be conserved and developed for our human use."

Cities Without Tax Maps Lose Thousands Yearly

ALTHOUGH real estate is always within view, cannot be removed, stolen or concealed, innumerable parcels are left off the assessment rolls, causing losses running into thousands of dollars annually for many cities, according to a report issued today by the National Association of Assessing Officers. The fixed quality of real estate leads to the erroneous belief that all of it, except that legally exempted, is assessed and taxed, the report points out. The reason much property today goes unassessed is, in a phrase: "No tax maps." Where accurate tax maps are not available, the assessor must rely on his memory and the previous year's assessment rolls, with results that are sometimes startling.

Aerial photography, a science that has made great strides within the last decade, is one of the most popular methods of tax mapping today. Experienced aviators fly the area to be mapped under the direction of professional aerial photographers. The plane is flown back and forth in strips, similar to the course of a lawn-mower, the camera shutter clicking at regular, specified intervals. The air-pictures are enlarged and used single or combined into mosaics. Property lines are delineated upon the pictures to complete the property record.

Aerial tax maps are quickest and cheapest, but for a high degree of accuracy, especially where land values are highest, the ground survey is still recommended.

Illustrating the evils where tax maps are non-existent and the benefits immediately arising when they are instituted, the NAAO report, entitled "Construction and Use of Tax Maps," offers some startling figures. For instance, East Haddam, Conn., built up its tax roll by 1,432 acres after completing an aerial tax map; Watertown, N. Y., discovered 100 parcels of land not previously assessed, valued at $77,600; Andover, Mass., found that an estate originally listed as 36 acres, from which 37 acres had been sold off in three transactions, actually contained 47 acres, 11 of them going unassessed for nearly half a century.

The report also explains in detail how tax maps may be secured, used and preserved.

A Well-Conceived Emergency Truck Built by a Water Utility

By FELIX SELIGMAN
Manager, Water and Light Department, Duluth, Minn.

SELDOM is a piece of maintenance equipment built with the hope that its use will never be necessary, but we who operate water and gas utilities are constructive pessimists in that we are continually expecting failures in our underground structures and formulate our plans with that thought constantly in mind.

Before giving a description of our emergency truck, I should like to review briefly some of the reasons, as I see them, which make a unit of this type a necessity to a water utility, and also that part of our equipment which it has been designed to serve. Developments of recent years have added their problems to the water utilities. Improvements made to our present-day concrete pavements tend to confine the discharge of water from broken mains below the ground and force it to find an outlet in basements adjoining the street, and flooded basements bring damage claims which often end in court.

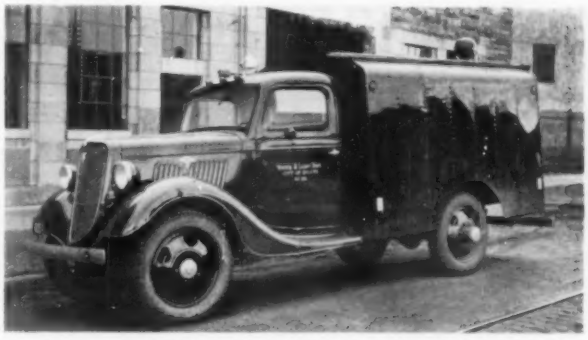
Damage Claims

No vivid imagination is needed to realize the extent of damage claims when basements filled with merchandise have been completely submerged. Some of us may attempt to take the stand that the courts will require the claimants for damages to prove the utility negligent; that the break was the result of acts within the control of the utility. In some states the courts have held that negligence must be proved before the utility can be held responsible, but Minnesota's Supreme Court has held otherwise, holding the utility responsible to the extent of keeping water under pressure confined so as not to damage surrounding property, regardless of the fact that negligence was not proved. Such being the situation, it behooves those in charge of water utilities to provide not only a system that is dependable, but to go one step further and provide some rapid means of closing valves where failures occur.

Preparedness Necessary

I know from experience that water utilities—and we are not an exception—pride themselves upon the efficient manner with which maintenance crews can make repairs once the necessary valves have been closed and the failure isolated. Since failures will occur when least expected, we designed and constructed a gridiron system of mains into which numerous valves were inserted so that failures could be isolated and service continued to all but a few consumers. Such a system expedites repairs and gives excellent control of failures, and guarantees service to the maximum number of consumers.

But we sought additional means of minimizing the losses due to failures. We asked ourselves these questions: How important is the need for closing valves rapidly? How much lost motion occurs before the break can be isolated? How about our procedure and equipment for closing valves? How does it compare with that used by other cities? How does our procedure during an emergency reflect the type of organization back of the water system? A study of these questions revealed the need of some type of unit for this and other work of a similar nature which would facilitate the making of repairs, aid in controlling traffic, provide illumination, if needed, and pump out flooded basements when necessary. Combining the salient facts thus gathered together, we designed and constructed our emergency truck.

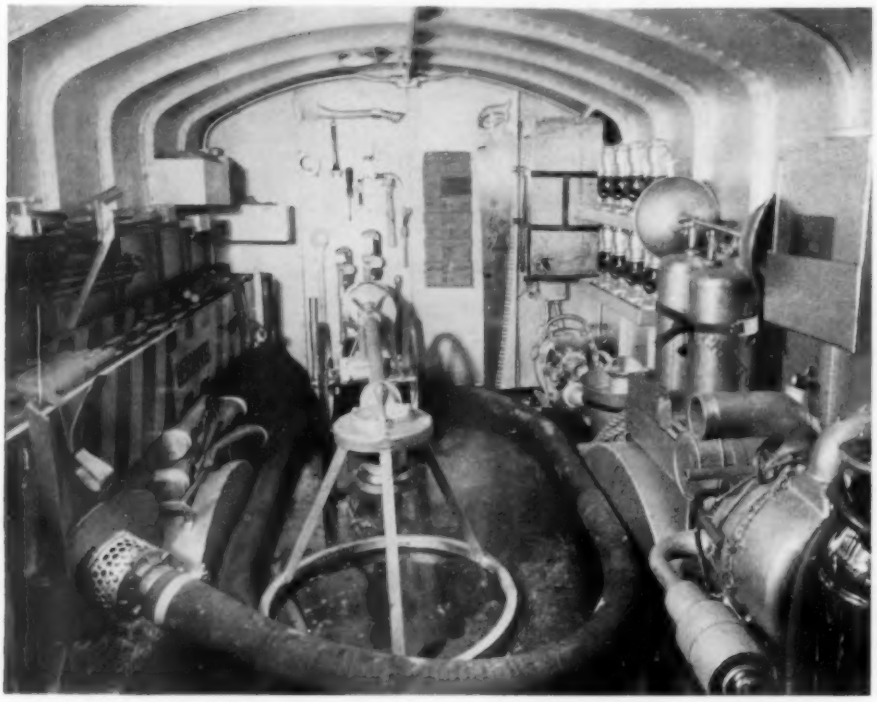


THE EMERGENCY TRUCK OF THE DULUTH WATER AND LIGHT DEPARTMENT

Inasmuch as an emergency truck would not be required to cover many miles in the course of its travels each year, one of the Department's used Ford trucks was selected for this work and given a complete overhauling. A new body for the truck was then designed by our Engineering Department and constructed by the Distribution Department.

All-Round Emergency Truck

While the truck was designed and constructed primarily for the purpose of closing valves following a failure of water or gas mains, consideration was also given to many other factors—of secondary importance before valves are closed but of major importance after the failure has been isolated. Of the several different methods and devices which might have been used for the purpose of closing valves, a Toledo universal power drive was selected because it could adapt itself to the conditions with which we would be confronted, such as the closing of valves not on streets, the ease with which it could be centered over a valve, and the fact that only one man would be required to operate it. This power drive is equipped with a special adjustable safety device to protect valves and valve stems from excessive stresses. The complete unit as purchased was modified only to the extent of fitting a stand con-



A WELL-KEPT CUPBOARD—THE INTERIOR OF THE EMERGENCY TRUCK—A PLACE FOR EVERYTHING AND EVERYTHING IN ITS PLACE

structed of steel to the drive end of the unit for the purpose of supporting and centering the drive over a valve-box or manhole.

The current required to operate this power drive is furnished by a Homelite portable gasoline engine-driven d-c generator rated at 1,250 watts, 110 volts. This unit is mounted permanently within the truck and, in addition to furnishing power required for the power drive, has sufficient reserve to provide power for the operation of two floodlights mounted on top of the truck. Once the valves have been closed, there is ample power available to provide all the illumination required around the vicinity of the repair work being done.

For pumping out flooded basements or trenches, the truck carries one 3-inch Homelite portable self-priming centrifugal gasoline engine-driven pump. This pump being portable, it can be removed to the location where needed.

Complete Equipment

The list of equipment given below indicates to what extent service can be expected from this unit:

1 No. 20 Garrison fire extinguisher
1 Homelite generator
1 3-inch Homelite pump
20 feet of 3-inch suction hose
1 Toledo power drive
2 10-foot valve-keys
1 5-foot valve-key
1 10-foot curb cock-key
2 carbic lights
1 gas mask (M.S.A.) All-service type
1 Bullard first aid kit
1 string of 8 electric lights
6 standards for lights
4 traffic barriers
1 floodlight, 100 watts
1 spotlight, 500 cp
1 flag standard
1 Spanner wrench
1 50-foot extension cord
Spare lamps and fuses
1 hand axe
3 pipe cutters
1 file
1 sledgehammer
1 pick
1 No. 2 shovel
1 5-foot crowbar
1 24-inch pipe wrench
1 18-inch pipe wrench
1 hydrant wrench
1 curb box wrench
1 6-inch Crescent wrench
1 pair pliers
1 flashlight
1 compass
1 50-foot tape
1 roll friction tape
1 pail and 10 feet of rope
1 pair goggles
2 danger flares
8 red lanterns
1 15-gallon gas tank
5 pairs hip boots
1 manhole hook
1 ice bar
1 4-inch cross-cut saw
8 lanterns
6 red flags
1 15-foot piece of chain
1 6-foot rule
1 map showing location of valves in distribution system

And It Does a Real Job

In the short period of time this emergency truck has been available and on the few occasions when it has been used, it has met all our expectations. Some idea as to the time required to close valves may be gathered from the fact that 16-inch valves can be closed in 3 minutes, 36-inch in 13 minutes, and 42-inch in 21 minutes.

Governmental Research Winners Announced

J. LYLE CUNNINGHAM, of the Department of Budget and Research of the County of Los Angeles, is winner of the 1936 award competition of the Governmental Research Association, it was announced at the Association's annual meeting on August 31. Mr. Cunningham received the award for his report on the administration of medical care to those on relief in Los Angeles County, Calif.

The report on public recreation in Cleveland, made by Leyton Carter, Director of the Cleveland Foundation, and the report on testing policemen in Detroit, made by J. M. Leonard, of the Detroit Bureau of Governmental Research, received honorable mention in the competition.

Judges in the competition were: William Anderson, head of the Political Science Department, University of Minnesota; Willard F. Day, County Manager of Henrico County, Va., and the late Clyde L. King, of the Wharton School of Finance and Commerce.

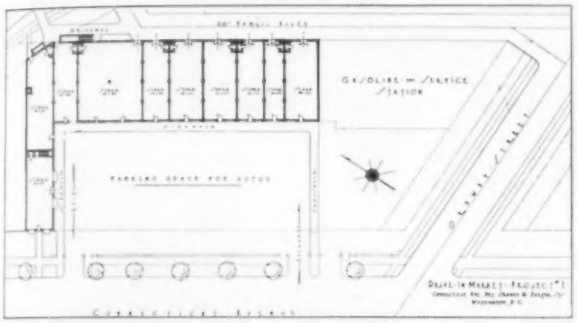
Each of the reports dealt with a specific problem in a particular community and contained definite recommendations for its solution. The Association's award is restricted to its membership, and under the terms of the competition is made on the basis of "the most noteworthy piece of research completed during the preceding calendar year."

Park and Shop

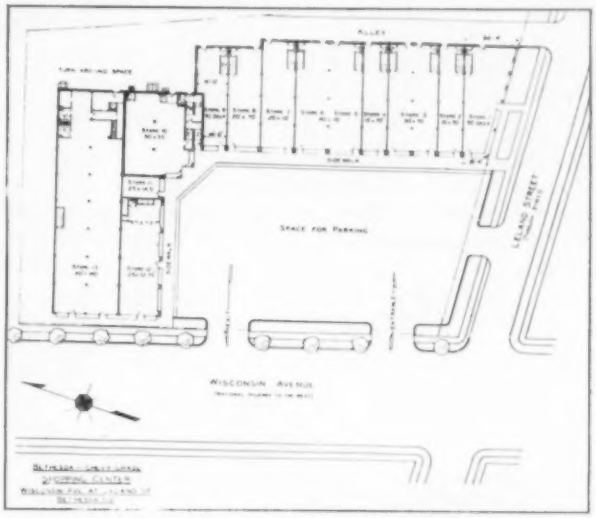
IN the June, 1937, issue of THE AMERICAN CITY, Robert C. Weinberg asks "For Better Places to Park," and mentions "park and shop" markets as one of the newest developments. Shannon and Luchs, realtors of Washington, D. C., have since related to us their actual experience with such projects. In 1930, they built their first group of stores to bring special joy to the heart of the motor shopper. The plan provided that the stores be built as far back as possible on the rear of the lot, allowing no more back yard than necessary for an adequate delivery alley. The excess land, which usually lies idle and strewn with rubbish behind shops, is properly surfaced for the parking of customers' cars at the front.

Group 1, Connecticut Avenue Park and Shop, faces on Connecticut Avenue, the main arterial highway to Chevy Chase. It is in the center of the apartment district and on the home-bound side of the street for the large Chevy Chase suburban area. The density of automobile traffic in that section makes the automobile parking area a distinct blessing to the shoppers and to the city.

Group 2, Colonial Village Parking Stores, built in 1935, is located on the home-bound side of Wilson Boulevard, the main highway to Clarendon, Va., and immediately adjoins the city side of the large FHA-financed apartment development known as Colonial Village. There are more



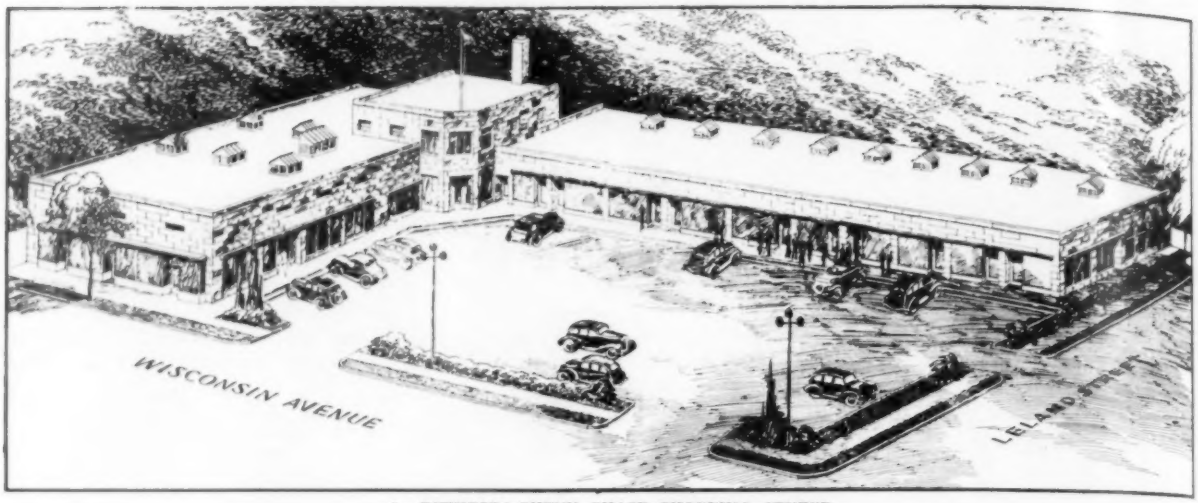
1. CONNECTICUT AVENUE PARK AND SHOP



3. BETHESDA-CHEVY CHASE SHOPPING CENTER

1. CONNECTICUT AVENUE PARK AND SHOP, WASHINGTON, D. C.

2. COLONIAL VILLAGE PARKING STORES



3. BETHESDA-CHEVY CHASE SHOPPING CENTER

than 900 families in this one settlement, the first unit of which is shown to the left of the stores in the photograph. The store group follows out the general architectural scheme of the adjacent housing. This development is somewhat different in character from the Connecticut Avenue Park and Shop, in that there is no traffic congestion, and the parking area is more of a convenience than a necessity.

Project 3, Bethesda-Chevy Chase Shopping Center, was completed early in 1937. It is located about 7 miles from the center of Washington and adjoins the fine suburban sections of Chevy Chase, Bethesda, Edgemoor, Battery Park and Sommerset. This group is particularly attractive and well-built, the limestone front presenting a very pleasing appearance. The shopping in this territory of detached homes is almost all done by the use of automobiles, and the parking area is not only a convenience but also a necessity.

This new idea in parking spaces has proved to be successful. The customers like it, and the merchants have been sufficiently taken by it to follow the new developments with additional stores, as illustrated by People's Hardware in the first two photographs. The Shannon and Luchs Co. now manages five groups of stores planned in this manner and hopes to have several more within the next year.

Small Town Boasts Elevated Tank

Lime Springs, Iowa, One of the Smallest Communities in United States with a Complete Water System

SINCE 1913, Lime Springs, Iowa, with a population of 539 and with only 66 water consumers, has had a water-works system. The water supply is obtained from a 10-inch well, 140 feet deep, located directly under the combined Town Hall and pumping station. The distribution system contains 400 feet of 6-inch, 5,000 feet of 4-inch, and 400 feet of 2-inch mains. The pumping equipment consists of a 350-gpm, 2-cylinder, double-action 5 x 10-inch pump. A 20-hp diesel engine furnished by the Super Diesel Co., St. Charles, Mo., is used as a standby.

Prior to the installation of the 50,000-gallon tank with its ellipsoidal bottom 100 feet from ground level, the town relied on two pressure tanks of 13,000 gallons capacity each for its only storage. Since the elevated tank was installed, the pressure throughout the town has been more nearly uniform, and the assurance of a constant supply at an elevation has been beneficial and has made it possible to reduce the time of pumping.

The improvements at Lime Springs were made under the direction of Ralph W. Gearhart, consulting engineer, of Cedar Rapids, Iowa. A. J. Cray is Mayor. The elevated tank was erected by the Chicago Bridge and Iron Company.

THE 50,000-GALLON ELEVATED WATER TANK OF LIME SPRINGS, IOWA

Street-Cleaning Problems, Los Angeles

By MOSIER M. MEYER
General Superintendent, Street Maintenance

WHEN the main street of Los Angeles was a dusty trail in summer and an impassable bog in rainy weather, the expense of street cleaning was not a large item in the annual budget. A sprinkle of tin cans, piles of branches, miscellaneous débris, even a few stray cats which had given up their nine lives, aroused no undue comment; but, along with other complexities of modern living, street cleaning has taken its place. Los Angeles, with perhaps the largest area of any city in the world, presents an unusual problem as regards street cleaning. The funds provided in the annual budget must be sufficient to clean the 5,695 miles of streets within the city limits. The most efficient results in street cleaning, considering the funds made available, have been attained in this large area of 441 square miles by the use of a combination of modern mechanical street sweepers, motor street flushers, and hand sweepers with broom, cart, and shovel.

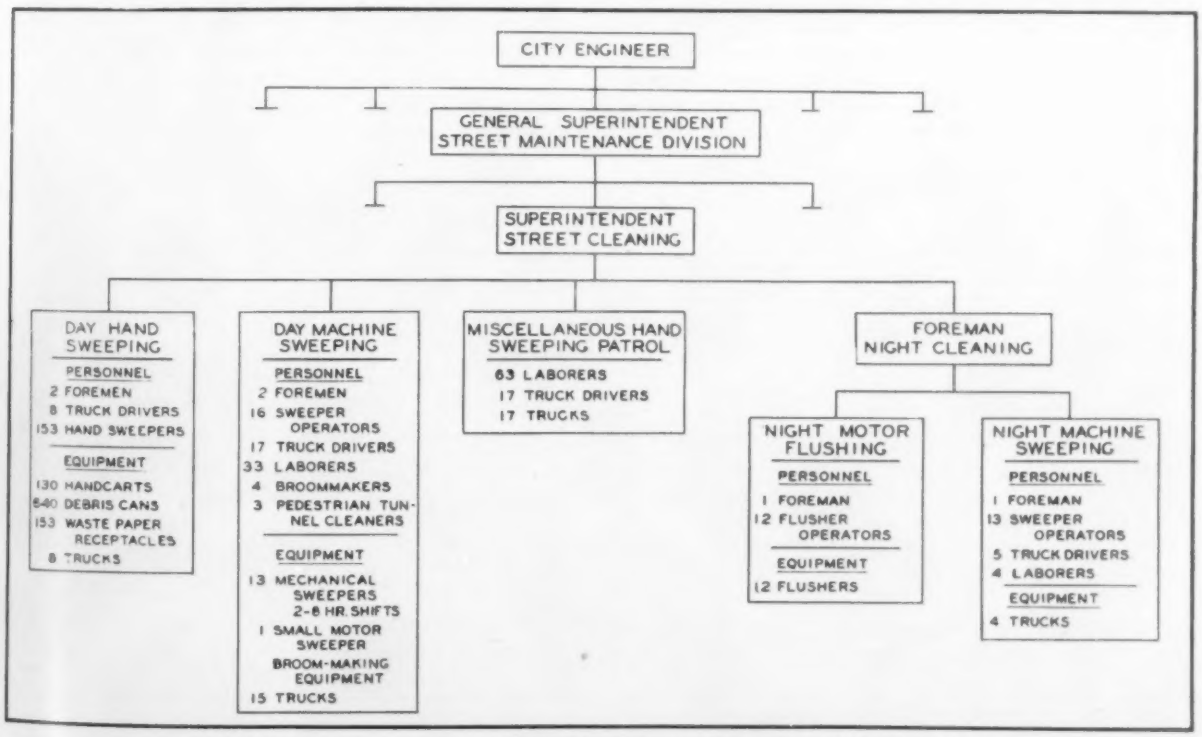
The 5,695 miles of streets are divided into the following three classifications: unimproved streets, 2,921 miles; oiled-surface streets, 758 miles; permanently paved, hard-surface streets, which include asphalt, concrete, macadam, brick, etc., 2,016 miles.

The oiled streets are almost entirely in the outlying residential districts, and for that reason it becomes necessary to clean these streets only once every three months with shovel and broom. The débris is deposited in piles by the street cleaners and is picked up by a truck immediately after being piled. The total personnel and equipment engaged in cleaning these 758 miles of streets are 63 laborers and 17 trucks, whose activity is supervised by the district street maintenance foremen, who handle this work together with their many other duties.

The 2,016 miles of permanent, hard-surfaced streets receive regular cleaning service and are divided into three district classifications: congested business district streets; semi-business and apartment house district streets; residential district streets.

Cleaning the Business District

Congested business district streets are swept every night with mechanical sweepers, flushed every other night with motor-driven flushers, and patrolled daily by hand sweepers who pick up the débris and sweep the local depressions in front of catch-basins and culverts, and the places along the curb where the mechanical sweepers are forced to turn out to avoid parked cars. The débris swept up by the hand sweepers is placed in cans, which are picked up by trucks once daily. Waste-paper receptacles are provided at each corner, in which pedestrians may deposit waste paper. We find, however, that the greater number of pedestrians use the receptacles to lean against, and throw their waste paper in the street. Another condition which adds a great deal to the cost of "day patrol" is that after the night clean-up, merchants in business districts allow their janitors to sweep the débris from the sidewalks into



ORGANIZATION CHART FOR STREET-CLEANING OPERATIONS IN LOS ANGELES, CALIF.

EFFECTIVE MINIATURE PICK-UP SWEEPER MADE BY AN EMPLOYEE OF THE BUREAU OF ENGINEERING
The 1¼-yard hopper usually discharges about 1½ yards when dumped as shown

the streets. We have a regulatory ordinance designed to stop this nuisance, but find that its enforcement is practically impossible.

The Apartment House District

The semi-business and apartment house districts are cleaned with a combination of machine and hand sweeping, and flushing, the same as in the business districts. The intervals between cleaning are greater, but sufficiently short, however, to keep the streets in a clean and sanitary condition. On an average, the streets in this district are cleaned twice weekly with mechanical sweepers and patrolled by hand sweepers about as often, and flushed with motor flushers once weekly.

The greatest problem of sweeping in these districts is the constant parking of cars. In some apartment house districts there is not a minute of the twenty-four hours that the streets are free from parking. With the trend of automobile design toward extremely low cars, it is most difficult to clean under these parked cars by hand. We have an ordinance which prohibits parking after 2:00 A.M., but this is not enforced, owing principally to the great number of automobiles in this city and to the lack of sufficient private parking facilities. The city recently amended its building ordinance to prohibit the construction of a dwelling of any kind without making provision for a garage for each family that is to occupy the premises.

Cleaning Residential District

The residential district is cleaned mechanically from twice weekly to once monthly, depending on the density of the population. The tree planting along the residential streets is also taken into consideration in establishing the interval between cleanings, for fallen leaves add to the cleaning problem.

Costs Lowered

The annual cleaning cost during the years prior to 1934 was approximately $1,250,000, but during the fiscal year 1934-1935, the practice of cleaning streets as described above was put into effect with a resultant lowering of the cost to $550,000 annually, which includes a depreciation charge on the equipment, without impairing the service rendered.

The personnel includes 29 motor-sweeper operators, 12 motor-flusher operators, 30 truck drivers, 153 hand sweepers, 36 laborers to load trucks, 4 broom makers, and 3 pedestrian tunnel cleaners. The equipment includes 7 Elgin and 10 Austin mechanical pick-up sweepers and the one new small-sized motor sweeper described below; 12 South Bend motor-driven flushers of 1,200 gallons capacity each, 9 of which are mounted on International trucks, 1 on a Moreland truck, 1 on a Federal truck, and 1 on a Fageol truck; 27 trucks for picking up débris, including 19 Chevrolet dump-trucks of 1½-ton capacity, 1 Ford dump-truck of 1½-ton capacity, 4 Federal dump-trucks of 2½-ton capacity, and 1 each 2½-ton White, Moreland and Brockway dump-trucks; broom-making equipment, 130 hand sweeping carts, 640 débris cans to hold street sweepings collected by hand sweepers, and 153

NOVEL HOIST FOR HANDLING DEBRIS CANS

waste paper receptacles which stand on street corners for public use.

The total cost of machine sweeping during the fiscal year 1935-1936 was $177,737, giving an average cost per machine-mile swept of $1,591. Compared to this, the total net cost of hand sweeping during the same period of time was $200,743. However, no correct comparison is possible with the cost per mile swept by machine because some streets are merely patrolled by hand sweepers after the machine has passed, and the places missed by the machines, such as under parked automobiles, are cleaned by the hand sweepers.

New Small Street Sweeper

There has recently been placed in service a small street sweeper, which, I believe, will result in materially decreasing the cost of street cleaning. This machine sweeps a path 54 inches wide. By reason of its small size and its light, simple construction, it appears to be a desirable machine for sweeping at a low cost. It is powered with an 8-horsepower gasoline motor geared to one traction wheel through a chain drive. The main sweeping broom, operating at a comparatively high rotary speed, throws the débris directly into a hopper without the use of a conveyor. The capacity of the hopper is 1¼ cubic yards. The machine is mounted on three wheels, the steering being done through a single rear wheel. Its short length and 6-foot turning radius make it possible to sweep around curb returns having a short radius, and close to and between parked automobiles. It covers 25 to 30 curb-miles in an 8-hour shift, as compared with 25 miles swept by the large sweepers, and uses from 2½ to 3 gallons of gasoline per shift. This machine has been in service six months, and it appears from our records that a greater use of these small machines will materially decrease our cleaning cost.

Parking Meters Solve the City Parking Problem

THERE is a definite wave of parking meters extending from Pacific to Atlantic, and at the rate they are increasing it will be difficult for an automobilist to travel far from home without coming in contact with them. Those who have studied their operation over some length of time believe that they are here to stay. They are being utilized by communities as a means of alleviating the ever-increasing traffic congestion in business areas and the selfishness of autoists in not observing traffic regulations. It has materially aided the autoist as well as the business and professional man.

The parking meter is designed as a mechanical traffic officer to aid in the supervision of the parking of automobiles at the curb in the business district, and to speed up the use of streets for traffic purposes. There are at least 15 types now on the market, but in general they are made up of a metal box approximately 6 inches wide, 10 inches high and 2½ inches thick, placed on a metal pipe support at about eye level. The box contains a clock mechanism similar to a taxi meter, a dial face, a flag or indicator, and a coin container. The meter can be set for 20 minutes, 30 minutes, one hour, etc.

When a coin, usually a 5-cent piece, is placed in the machine, the clock starts to run and the indicator shows on the dial the elapsed time as the meter continues to run. If set for 45 minutes, at the expiration of that time the flag or indicator shows that the time is up, and anyone can then see that the autoist is over-parking. One police officer can supervise a much larger area with meters than he can when he has to mark tires to check over-time parking. The meters are placed on the sidewalk about 16 inches from the curb and spaced 20 feet apart, allowing one automobile per space.

For many months some merchants of Portland, Ore., had been advocating the trial of meters, and as a result of a large petition presented to the Council I made a trip to investigate the use of meters in eight cities.

The parking meter was first introduced in Oklahoma City, and proved so successful that 301 more were installed, and then 47 more, making a total of 522. I was in Oklahoma City, Kansas City, Mo., Fort Worth, Dallas, Houston, San Antonio, and El Paso, Texas, and Long Beach, Calif. All these cities had parking meters. Every city had the same story to tell, the same arguments to offer: the parking meters reduce double parking; increase the flow of traffic; help pay for traffic officers; women like to use them because of plenty of room in which to park; merchants like them because the purchaser can park in front of or near the place of purchase. The wave of meter installation is gaining momentum, and trials are being made in more than forty cities in the Middle West.

The City Council of Portland has voted in favor of a trial, and the Mayor has appointed a committee of nine business men to select the type of meter and the location of the trial, which will probably be the entire congested business district.

ORMOND R. BEAN,
Commissioner of Public Works, Portland, Ore.

Municipal Auditoriums Increasingly Popular

A BOOM in the building of municipal auditoriums, now seen as essential civic undertakings rather than revenue-producing enterprises, is reported by the International City Managers' Association.

Within two years, nearly fifty cities, ranging in size from Primrose, Nebr., population 210, to Kansas City, Mo., population 399,746, erected such public structures. Information from 18 of these cities shows these facts:

Slightly over one-third of their total cost was financed by PWA grants; only two cities received PWA loans as well. Remainder of the cost was met in most instances by bond issue. The total cost of the auditorium in 11 cities under 10,000 population was about $90,000. Among the larger cities, Houston's cost $1,337,000; Kansas City's, $6,500,000.

Most of the auditoriums were built for small communities. Besides the auditorium proper, the smaller cities usually provided space for city offices, a room or two to be used by private local organizations, and accommodation for library and recreation facilities.

None of the cities reporting intend to operate the buildings to make money, but they hope to meet operating expenses. San Jose, Calif., the first eight months spent $15,196 to operate its auditorium; income was $11,946. Shawnee, Okla., the first year of operation, realized $3,557, while expenses were only $3,180.

Rate policies on use of the auditorium are not standardized. Mobridge, S. Dak., for example, charges $50 an evening for dances and theatrical performances. Alliance, Nebr., has adopted a detailed schedule of fees ranging from $15 a day for religious or educational use to 30 per cent of admission receipts from commercial users. For farm meetings, conventions and non-commercial use of general community interest, the auditorium is free.

A Home Worthy of the Proudest Birds and Beasts

By SIMON F. ELLIOT
City Engineer, Pueblo, Colorado

ONE of the distinguished examples of the modern trend in municipal park development is found in Pueblo, outstanding industrial city in the Rocky Mountain region. The plan of park development, now being brought to fruition, was conceived and supervised throughout by Ray H. Talbot, Commissioner of Parks, Highways and Lighting.

Reproduced here are views of the recently completed zoo and aviary in Pueblo's City Park. These improvements—representing but one phase in a comprehensive and carefully planned program—were made possible through a series of Federal aid projects which reflect an increase of more than a quarter of a million dollars in the municipality's material wealth.

Greater in value than any mere appraisal of the city's development of resources is the consideration of human potentialities. It has been Mr. Talbot's ideal to provide wholesome attractions, to develop and maintain more extensive recreational facilities; and, in a larger sense, to make each unit of the municipal park system serve the maintenance of social stability in the community. These efforts have been eminently successful. An increase of more than 400 per cent in park attendance has been registered during the current season. Careful surveys indicate that 25,000 persons, residents and tourists, visit City Park on an average Sunday or holiday. This figure is impressive when one considers that it involves more than one-half the city's actual population.

5—ANIMAL PIT NO. 2, SHOWING TWO NATIVE BEAR OCCUPANTS AT HOME; TRANSPLANTED BLUE SPRUCE IN LEFT FOREGROUND

The Stone That Built the Aviary

The aviary is a monument to hand labor. It was built of mountain surface stone hauled from a point 30 miles distant from the city. It should be emphasized that the stone was not quarried. The utmost care was exercised to preserve the native aspect. Not even the moss or natural fungus growths were disturbed. The stones stand today just as they stood in their native element, typifying, in miniature, the majestic grandeur of the mountain range.

In this respect an architectural effect truly native to the region has been evolved. We have endeavored at all times to avoid the effect of newness, so incongruous before a background of these timeless hills. The stone bears no tint of artificiality. It retains the natural hues evolved in the slow process of geological time. The result is that the completed building is an appropriate monument, an integral part of the landscape.

The aviary provides quarters for hundreds of specimens of bird life. Many exhibits—those of tropical birds, for example—have never before been publicly displayed in this region. The building has facilities for heating by

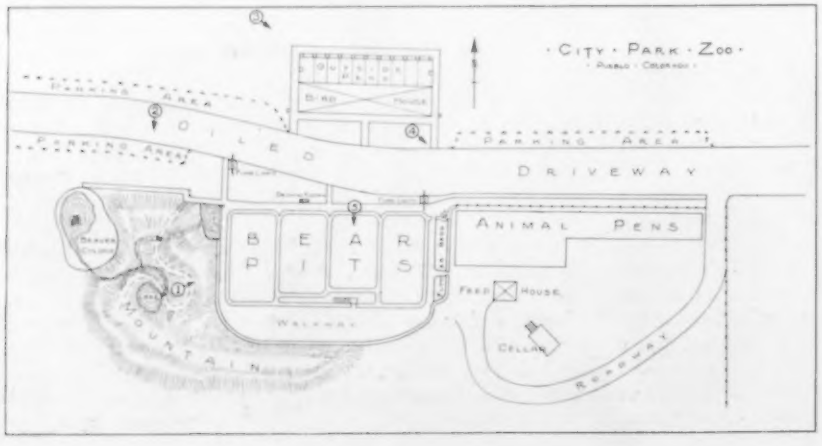


DIAGRAM OF CITY PARK ZOO, PUEBLO, COLO.

The encircled numbers correspond to those on the photographs and are spotted where the photographs were taken. The arrow indicates the direction in which the camera was faced

1—COMPLETED ANIMAL PITS, FLOODLIGHT TOWERS, AND AVIARY (ON OPPOSITE SIDE OF ROADWAY)

2—MINIATURE MOUNTAIN CONSTRUCTED FROM DIRT FROM ANIMAL PIT EXCAVATIONS; ANIMAL PITS AT EXTREME LEFT

3—REAR VIEW (NORTHERN EXPOSURE) OF COMPLETED AVIARY, SHOWING OPEN-AIR SCREENED ENCLOSURE

4—VIEW OF MAIN ENTRANCE OF AVIARY, SHOWING STEEL ENCLOSURES OF CITY PARK ZOO; SHELTER AND FLOODLIGHT TOWER AT EXTREME RIGHT

steam. In the rear are open-air enclosures for pheasants and seafowl. This area also provides winter quarters for the hardier birds indigenous to the Rocky Mountain area.

The Growth of the Zoo

The zoo and animal pits represent the most extensive development of this nature ever undertaken in southern Colorado. To begin with, the City Park "zoo" consisted of one pen housing two native bears. Fifteen steel-enclosed sections have been added to the original unit. This extension, together with the animal pits, provides sanitary quarters for additional bear families, for lions, lobo wolves, lynxes, coyotes, porcupines, opossums, raccoons, prairie dogs, skunks, civet cats, rhesus monkeys, Colorado eagles, native owls, magpies, and other isolated specimens.

Adjacent to the animal pits are the quarters of a beaver colony, stocked by the State Game Department. A series of canals, when completed, will provide for an artificial island which will contain a monkey settlement. The canal system will be extended to provide a moat segregating the animal pits.

Dirt excavated during construction of the animal pits was utilized in the building of a miniature mountain. The "mountain" followed no definite design. It simply grew, and soon developed into one of the most popular attractions in the park. It is supplied with precipitous crags, bubbling streams, caverns, growths of wildflowers, and a long, rambling trail leading to the summit.

This particular park area continues to draw a throng nightly by reason of an ornamental system of floodlighting. Especially striking is the exquisite grillage, handwrought by a master craftsman, which is a part of the lighting fixtures.

Plans and specifications were devised by the City Engineer's office. Ben Bayliss, one of the best-known construction foremen in this locality, supervised the masonry. The project as a whole was directed by Oscar Ikenberry, Park Superintendent.

A National Competition in the Structural and Architectural Design of an Elevated Highway

SEEKING a permanent solution of the dual problem of traffic congestion and automobile accidents in cities, the American Institute of Steel Construction announced, at a meeting on September 21, a nation-wide competition for the most suitable structural and architectural design for an elevated highway. The competition was opened with its announcement, and will continue until March 31, 1938. Awards will be made as soon as possible thereafter: First Prize, $5,000; Second Prize, $2,000; Third Prize, $1,000; ten Honorable Mentions, each $100. The Jury of Award is: Harland Bartholomew, City Planner, St. Louis; Col. Willard Chevalier, President, American Road Builders' Association; Paul P. Cret, Architect, Philadelphia; Loran D. Gayton, City Engineer, Bureau of Engineering, Department of Public Works, Chicago; Paul G. Hoffman, President, The Studebaker Corporation; Albert Kahn, Architect, Detroit; and C. M. Pinckney, Chief Engineer, Borough of Manhattan, New York.

In announcing the competition, Clyde G. Conley, President of the Institute, emphasized the ridiculous condition of so-called high-speed motor traffic in cities—a slow crawl not much better than the average 11½ miles an hour of the old horse-drawn coaches on New York streets. Mr. Conley believes that such highways as are called for in the competition can be built the whole length of important traffic streets, without detracting from the architectural excellence of the streets or from their facilities and conveniences.

Speaking at the same meeting, Dr. Miller McClintock, Director of the Bureau for Street Traffic Research at Harvard University, stated that the largest controlling factor in the consumption and use of automobiles in this country is the provision for security and convenience, and that from five to ten million more automobiles than at present in use would be bought by American people who need them and can afford them, if safe and efficient flow of traffic could be assured. This will be accomplished, Dr. McClintock believes, in the rebuilding of American cities in the next 25 to 50 years, on a basis of intelligent traffic engineering. He gave the gathering a glimpse of future possibilities by a picture of a plan of a model city designed by Norman Bel Geddes, showing a gigantice grid of elevated express highways, laid over a network of local traffic areas, with all intersections eliminated by over- and under-passes. Pedestrian traffic is separated from vehicular traffic by sidewalks a story above ground at intersections and bridged at cross streets. Express traffic boulevards are spaced at 12-block intervals, and the intervening streets for local traffic are one-way thoroughfares.

This city of tomorrow was characterized as one of the most urgent of present necessities—physically practical, and financially possible. "The funds which cities are wasting today in a futile effort to widen their streets for greater traffic capacity would be far more than ample to provide these cities with permanent high-speed traffic routes of almost complete safety," said Dr. McClintock. He proclaimed the meeting at which he spoke as one of historic significance, in marking the recognition by one of America's great basic industries of the need of solving our traffic problem, and in this recognition making vigorous action inevitable.

The printed announcement of the competition may be secured from V. G. Iden, Secretary, American Institute of Steel Construction, 200 Madison Avenue, New York.

Voters in Aberdeen, S. Dak., Demand Repeal of Green River Ordinance

THE City Commissioners of Aberdeen, S. Dak., upon receiving a petition signed by more than 15 per cent of the legal voters of that city, rescinded the so-called Green River ordinance forbidding all house-to-house solicitation except at the express invitation of the housewife. Aberdonians considered this extreme attempt to outlaw fly-by-night hucksters with worthless wares a discrimination against legitimate selling. There were sufficient petitioners to bring the matter before the people in a special election within thirty days, and to save this election expense and to avoid inevitable defeat, the Council threw out the law it had favored a month before. Other cities that are considering this Wyoming ordinance as a model would do well to study its fate where it has been tried and has failed.

—From *News* from Leo Burnett Co., Inc., Chicago, Ill.

Village Accounting

By ROBERT E. PATTERSON
Mayor, Freeport, N. Y.

SUMMARY OF TAX BUDGET

Fiscal Year Ending February 28, 1938

General Government		$ 58,367.17
Board of Trustees and Mayor	$ 1,792.00	
Village Clerk	10,479.00	
Village Treasurer	3,645.00	
Village Counsel	2,945.00	
Police Justice	4,280.00	
Assessor	7,250.00	
Municipal Building	3,893.45	
Elections	2,477.00	
Building Department	6,212.00	
Miscellaneous	15,393.72	
Protection of Persons and Property		$139,294.90
Police Department	$102,832.77	
Fire Department	36,462.13	
Conservation of Health		$ 9,993.22
Health Officer	$ 2,175.00	
Nurses	3,875.00	
Other Health Expenses	3,943.22	
Sanitation and Promotion of Cleanliness		$ 92,389.09
Sewer Commissioners	$ 1,400.00	
Sewer Disposal Plant	20,326.73	
Sewer Maintenance	6,253.77	
Refuse and Garbage Collection	44,186.99	
Incinerator	20,221.60	
Highways		$ 50,965.15
Docks and Waterways		$ 100.00
Recreation		$ 16,217.95
Parks, Playgrounds and Beaches	$ 5,443.23	
Stadium	10,574.72	
Memorial Day Observance	200.00	
Miscellaneous		$ 3,092.50
Publicity and Advertising	$ 1,000.00	
Bus Terminal Maintenance	2,092.50	
Municipal Indebtedness		$200,630.30
Payment of Principal	$126,550.00	
Interest on Debt	74,080.30	
Total Estimated		$571,050.28
Less Amount Available		134,690.01
To Be Raised by Taxation		$436,360.27

UNPAID SPECIAL ASSESSMENTS, AS SHOWN BY MAPS AND SCHEDULES ON FILE IN TREASURER'S OFFICE

Map No. 1 (Porterfield Place)	$ 2,137.14
Map No. 2 (Hillside Avenue)	676.08
Map No. 3 (Sunrise Highway)	13,431.32
Map No. 4 (Lillian Avenue)	1,109.78
Map No. 5 (Southside Avenue)	487.90
Sidewalks	14,381.51
Trunk Line Sewer	33,130.33
Lateral Sewer District No. 1	155,161.12
Lateral Sewer District No. 2	78,755.43
Lateral Sewer District No. 5	73,187.53

SAVE YOUR TIME AND PAY TAXES BY MAIL

This method is easiest and quickest. Use Money Order, draft or check. MAKE CHECKS PAYABLE TO VILLAGE OF FREEPORT, and with your remittance please enclose a self-addressed stamped envelope for the receipted bill.

THE village of Freeport, Long Island, has three chief sources of revenue —taxes, receipts of the Water Department, and receipts of the Electric Department.

There are approximately 9,000 parcels of property assessed in the village of Freeport, with a total assessed valuation of $43,636,027. The present tax rate is $10 per thousand, as against $25.60 in 1926. The assessing is done by the Assessor and his assistant during the period from May 1 to November 1, and the books must be ready by Grievance Day, which is the third Tuesday in November.

The valuation is determined upon the actual value of the property. In the beginning this value was based on the opinion of a number of real-estate men; but later on, as property began to turn over, it was based on actual sales. Property owners are assessed for exactly what they own—50-foot front or 51-foot front.

The tax-roll is made up from the field book, and the owners' names and the description of the property are placed on Addressograph plates. One clerk can run off the data on the tax rolls at the rate of 500 to 600 per hour. The entire 9,000 parcels are recorded in three days. The tax rate is decided by the Village Board about May 15, and the tax rate and total tax are written in by hand on the tax roll. The computations are made on a calculating machine, and all the extensions are made in an astonishingly short time. The tax bills are made out in triplicate, and the exact information including the property description is on each one. This is also done on the addressing machine. Bills are in the mail by June 1, which allows the taxpayer 30 days to pay.

The third copy of the tax bill is sent to the taxpayer, and the other two copies are retained in a file in the village office. When the taxpayer comes in to pay his taxes, these two copies are stamped with a perforating stamp giving the teller's number, date, "Paid, Village of Freeport." One copy is given to the person paying the tax, and the other copy is retained for posting to the tax roll. It has been found that this method of receipting the bill has speeded up the collections and it is not necessary for any one to wait in line more than two or three minutes. This is an example of applying mechanical principles to accounting, which results in cutting down the number of hand operations and reducing the amount of work to a great degree.

Public Utility Accounting

Freeport owns a diesel electric plant that is rated one of the three most efficient plants in the country. When one considers that the Department had a total revenue last year of $364,900.21, it can readily be seen that the

VILLAGE OF FREEPORT---TREASURY DEPARTMENT
FREEPORT, NASSAU COUNTY, N. Y.
BILL FOR TAX LEVY OF YEAR 1937
(TAX LAW, SECTION 70-B)
TO COVER PERIOD FROM MARCH 1, 1937 TO FEBRUARY 28, 1938

Assessment Roll of the Village of Freeport, Nassau County, New York, for the year 1937, upon which the within described Assessment and Tax appears, was delivered to me, Stephen W. Hunt, Treasurer, the 16th day of May, 1937.
Assessed Valuation $43,636,027.00
Rate per hundred $1.00

1st Half of Tax Due June 1, 1937
2nd Half of Tax Due Dec. 1, 1937

PRESERVE AND RETURN THIS RECEIPT WHEN PAYING SECOND HALF SO THAT PAYMENT CAN BE NOTED THEREON.

IMPORTANT — Compare name of Map, Block and Lot Numbers with deed before paying this bill, and if found in error, kindly return same at once, stating correction. Payment once recorded cannot be changed.

This bill covers the year indicated only, and does not assume to cover prior taxes. If uncertain as to prior taxes apply to the Village Treasurer.

The last date for payment without penalty is July 1, 1937, on the first half, and December 31, 1937, on second half.

Taxes may be paid on or before July 1, 1937, without additional charges; interest of 5% for the first month and one-half of 1% for each month thereafter added after July 1, 1937, and December 31, 1937, on second half.

CASH PAYMENTS MUST BE MADE IN PERSON BEFORE 4 P. M., SATURDAYS, 12:00 M.

All requests for bills or receipts to be sent by mail must be accompanied with postage stamps to insure compliance therewith.

All checks accepted subject to collection.

Page No.	Name of Last Known or Reputed Owner and Description of Property	Assessed Valuation: Full Value of Land (Inclusive of Buildings Thereon)	Assessed Valuation: Full Value of Real Property (Less Exemptions, if any)	First Half Tax	Second Half Tax	Total Tax
	JOHN DOE FREEPORT N.Y. N. PEARSALL AVE. E. L.E.WISE S. H.JACKSON W. PENNSYLVANIA AVE.	990	990	4.95	4.95	9.90
		Paid by Check ( ) ( )		Interest	Interest	Interest
		Paid by Cash ( ) ( )		Total PAID	Total PAID	Total PAID
	V.L. 65'			Received 1st Half Tax	Received 2nd Half Tax	Paid to Full
				V OF F	V OF F	V OF F

accounting is an important matter. Our system provides a method of detailing operating expenses so that it is possible to determine complete production costs not only for the entire plant but for each engine and generator. In this manner it is possible at all times to have the complete data on the efficiency of any unit, and the Board can determine just when it is economical to add to or replace any part of the plant.

The Electric Department has some 6,000 consumers who are receiving current at a very low rate. The benefits of increased efficiency in operation have consistently been turned back to the ratepayers in reduced rates. The rates have been lowered every year for the past five years, and increased consumption will result in further reductions.

The revenue accounting provides a method of consumer kwh analysis which makes it possible for the Board to determine at any time the detailed effect on revenue of any proposed reduction in rates. The 6,000 meters are read monthly by two meter readers, who also compute the kwh consumed and make the extensions on the meter book. The meter books are then taken by the meter department, and the bills, which have previously been Addressographed and numbered, are made out with a modern billing machine, which furnishes mechanical proofs of billing and automatically totalizes the amount of revenue from each service classification. The billing machine not only makes out the bill but in the same operation provides a consumer's ledger, so there is no hand posting operation. As the bills are paid at the cashier's desk, the bill stubs are sorted numerically for posting of cash to the ledger.

One of the common complaints by private utilities is that municipal utilities do not properly record all their operating expenses but disguise them in other municipal expenditures. This is not true in Freeport. All expenses of the Electric Department are carefully recorded, and the Department even pays the general village government a rental for space used in the Municipal Building. Our electric rates are directly comparable with those charged by privately owned utilities.

Accounting of Water

Freeport has found out that water bills can be handled most efficiently on an annual basis, and all the meter reading and billing is handled by one employee, who again takes advantage of the use of the addressing machine to eliminate laborious hand operations. Some of the bills for residences are handled on a flat-rate basis with an annual charge; but the business places, which use large or varying amounts of water, are metered. Water bills are charged to the owner of the property and become a lien against the property, so that a person investigating title to a property has readily available the complete data on the water bill. In this way they differ from bills for electric service, which are paid by the tenant.

The Problem of Pay Increases for Public Employees

NATURALLY, one would expect salary and wage adjustments among public employees to parallel the economic cycle, as do labor earnings in private employment. Food costs rose from an index figure of 70 in 1932 to 82 in 1936; weekly factory earnings rose from an index figure of 88 in 1932 to 97 in 1936; and yearly earnings in purchasing power of each full-time worker rose from an index figure of 104 in 1932 to 125 in 1936. Yet there is a strong resistance to the restoration of government pay cuts, which, according to the Princeton Local Government Survey (Folder Series No. 18), is traceable to four substantial facts:

First, there is no confidence among the public in the integrity of the public employment system. It is generally assumed that there are many unnecessary units, that there is excessive personnel and widespread duplication of effort.

Second, the groaning property tax structure does not welcome additional expenditures. True, collections have shown considerable improvement in the past year, but as of December 31, 1936, outstanding uncollected taxes in New Jersey totaled $211,890,079, which included $78,840,655 in tax title liens bought by the municipalities at tax sales. This figure is equal to about 89 per cent of the total 1936 tax levy in New Jersey of $236,904,137. Encouraging statistics for 1936 show that 122 municipalities collected 75 per cent or more of the levy during that year, whereas in 1933 only 58 municipalities collected as large a proportion of the current levy. There were 178 taxing districts that collected less than half of the 1933 levy by the end of the year, while 83 municipalities collected less than 50 per cent of the 1936 levy during the year. But although there has been improvement, the situation is still serious for a large number of New Jersey municipalities. There were 7 taxing districts that collected from the 1936 levy less than 25 per cent of the levy during the year.

The third obstacle to pay increases is the extremely erratic nature of public service salary and wage schedules, making intelligent and effective adjustment well-nigh impossible, as the taxpayer is aware. The taxpayer also knows, as the fourth difficulty, that in many cases among government personnel there is no relation between the salaries and wages paid and the quality of the work and the qualifications of the worker.

It is easily seen from this analysis that government personnel problems are serious and demand immediate attention. Through attempting to adjust the pay of public employees under existing circumstances, an already distorted picture is bound to become still further distorted. The Princeton Local Government Survey has something to say on this subject in its *Pocket Report No.* 2, "The Thorny Question of Personnel."

UNDER THE BIG PAY-TREE
State May Give Salary Raises
Essex Dispute Over Pay Rises
MORE SHARE IN RESTORED PAY
Denville Plans Pay Increases
COUNCIL WILL GET EQUALIZERS PAY SCHEDULE
POINT TO WAY FOR MORE PAY BOOSTS
Mandatory Pay Rises Looming
PAY BOOSTS TO BE CONSIDERED TODAY
Democrats Hit Salary Boosts
Pay Rises Again
JERSEY TOWNS MUST LIFT PAY TO 1929 RATES

Refuse Collection and Disposal in Chicago

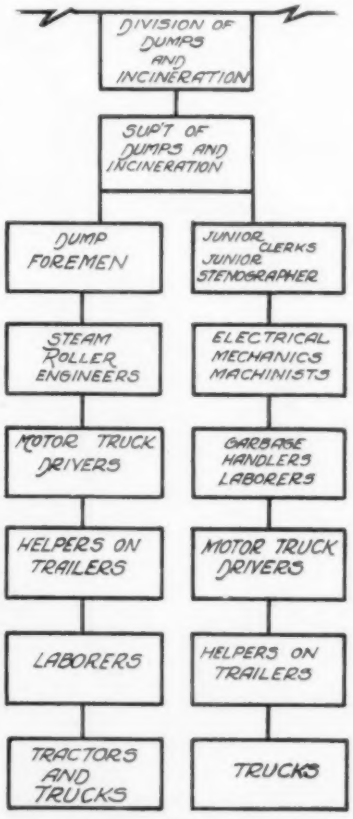
By JOSEPH J. BUTLER
Superintendent of Streets; Assistant Commissioner of Streets and Electricity

AFTER years of agitation against the antiquated method of collecting ashes and household refuse by the use of dilapidated, leaky wagons, polluting the air and scattering dust over the streets and alleys of Chicago, it was decided that the motor tractor-trailer system would be the most satisfactory, and it was installed.

The new system has many features superior to the old. The trailers have watertight steel bodies and are so constructed on their gearings as to be self-dumping when the holding chains are released. Because of the frequent stops required, the trailers are drawn by horses while refuse is being collected. After being loaded and covered, the trailers are hauled to places designated for the make-up of trains. Motor tractors then haul them in units of three to the disposal places, returning with the trains of empty trailers, thus permitting the process of collection to be continuous.

A driver and helper collect from four to five trailer loads of refuse daily, instead of two team loads or less under the old system, when drivers were obliged to load the wagons and drive to the dumps. Not only is the new method more economical, but under it service is immeasurably more reliable. This service is extended to the removal of waste and street dirt accumulated by sweepers.

The humane aspect in favor of the new method should not be overlooked. Wagon drivers frequently suffered because of the intense heat in summer, and had their hands and feet frozen during drives to distant dumps in the winter. Now chauffeurs and helpers are protected by cabs and comfortable enclosures. Formerly, travel to distant dumps caused horses to drop from the heat of summer and become spent and exhausted by the trying conditions of snow, ice and the cold of winter.



A SECTION OF THE ORGANIZATION CHART OF THE DIVISIONS OPERATING UNDER THE SUPERINTENDENT OF STREETS, CHICAGO, SHOWING THE REFUSE COLLECTION AND DISPOSAL DIVISION

The increasing scarcity of dumps for ash and refuse disposal and the distance to the few available, made the horse-drawn method impractical and almost prohibitive in cost and was a potent factor in modernizing the method of waste collection.

At the beginning of 1921, the city extended the tractor-trailer system so far as practicable throughout the city, laying off hired trucks, and thus completing the plan previously inaugurated. In recent years, curtailment of funds has caused a standstill in enlarging this system, and recently new equipment of the semi-trailer type has been given consideration, since it does away with the long train of trailers on the public streets.

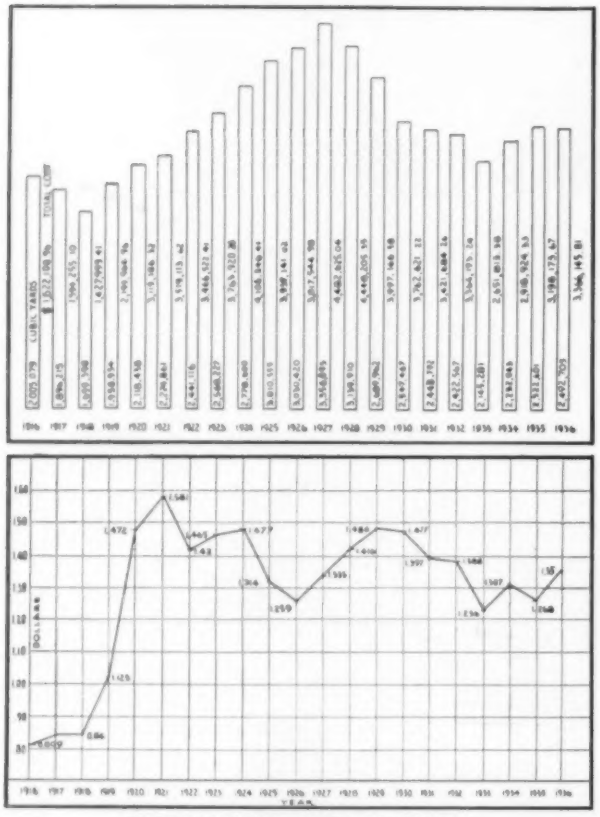
Incineration

Many years ago, the city studied the problem of the collection and disposal of municipal waste, and the vital importance to the city of Chicago of this particular activity. The investigation disclosed that at present there are only two modern methods of waste disposal in use in our great metropolitan cities, one being reduction and the other incineration.

In the reduction process, domestic garbage must be separated from the other waste, such as ashes and rubbish. Ashes and rubbish must be disposed of in dumps, and domestic garbage alone is handled by being put through a drying process and by extracting the grease. This grease is sold for soap-making. The residue has some value as a fertilizer base. Before the war, labor costs were low and the price received for the grease comparatively high, and in some cities the reduction process showed a profit upon the investment. Since the war, the cost of labor has greatly increased and the return from the sale of grease is much less. The reduction process in many parts of the country is carried on at a loss to the taxpayers. For this reason, Chicago abandoned the reduction system.

Where incineration is used, ashes and non-combustible refuse must be separated from the other waste, and all combustible material is put into a furnace and burned to an ash. In a properly designed and operated incinerator there is no nuisance from odors, smoke or noise. Experience has shown that where an average temperature of 1500 degrees is maintained within the furnace, all odors are consumed; and where the combustion chamber and stacks are properly designed, there is no nuisance from smoke.

From the sanitary point of view, incineration is better than any other known method of disposal, and from the standpoint of economy incineration is superior to any other process. The collection costs are lower because the haul can be kept shorter, for the reason that an incinerator can be built in practically any location.



STREET-CLEANING COSTS IN CHICAGO

Above—Expenditures and quantities of garbage and miscellaneous waste collected and disposed of by years

Below—Cost per cubic yard for collection and disposal

With incinerators advantageously located throughout the city, the distance of haul can be reduced so that the average haul would be about 2½ miles. The tremendous reduction in cost of waste disposal, due to this shortened haul, can easily be appreciated. The cost of operation of an incinerator is lower than that of any other known method; high-class technical labor is not needed, and the number of employees required is less than in any other process.

The investigation carried out under the direction of the city officials proved conclusively that because of its sanitary and economic advantages the method of waste disposal to be adopted by the great metropolis of Chicago should be incineration.

The Goose Island Incinerator

In 1917, the city bought a strip of land on Goose Island along the river south of Division Street, and the construction of an incinerator on this site available for the disposal of combustible refuse, including garbage from many wards, was the logical conclusion. One incinerator, however, does not solve the problem of long haul, and therefore serves only a portion of the city.

After deciding upon incineration, the next step was to find the most sanitary, efficient and economical type of incinerator, and every kind of refuse-disposal plant now in operation in this country was studied and analyzed. In spite of strong opposition, which was unwarranted, the city persisted in its determination to build the plant, and an incinerator was put into operation for the destruction of combustible refuse from the north and northwest side wards.

Since its opening, no criticism has been made of smoke or odors from the plant. It is operated until all refuse is consumed, and then thoroughly washed, eliminating odors and the nuisance of flies. Property owners, business men, and residents of Goose Island, believing the incinerator would prove offensive and objectionable, were ready to apply for an injunction as soon as it should begin to operate. But it has been so acceptable in every way that it is today more than probable that these same persons would strongly protest if they were likely to lose this fine building, with trees, central flower-bed and grass plot—the only trace of a park on the island.

Much of the combustible refuse, paper, etc., was formerly gathered by city laborers and burned in wire containers, a slow and expensive process. This method was objected to by automobile owners having garages abutting upon alleys, by householders, and the fire department. All of this refuse from the ward served is now taken to the incinerator. It was only because of a small appropriation during the depression and a very low cost for dumping privileges that the incinerator was temporarily closed and all refuse hauled to dumps or loading stations to be transported out of Chicago to outlying dumps.

Garbage and Combustible Refuse Collection

Wrapped garbage and other combustible refuse on the north and northwest sides was hauled by tractors to the incinerator located on the near northwest side at 1164 North Branch Street, Goose Island. The incinerator has a capacity of about 600 tons in 24 hours. Chicago's plan for the future, when funds are available, contemplates the construction of four additional incinerators at locations most advantageous to the districts to be served.

YEAR 1936

REPORT OF WASTE COLLECTION AND DISPOSAL, CHICAGO, ILLINOIS

The estimated population of Chicago on December 31, 1936, was 3,885,246

GARBAGE, ASHES, RUBBISH AND STREET DIRT COLLECTION AND DISPOSAL

Collection—2,492,705 cubic yards, or 495,172 loads, of ashes, garbage and street dirt were collected and removed to dumps and loading platforms.

Collected by	*Loads*	*Cubic Yards*
Trailers	340,647	1,574,448
Hired trucks	101,303	669,718
City trucks	46,261	223,491
Teams	6,961	25,048
Total	495,172	2,492,705

Cost of collecting and hauling	$2,673,863.51
Cost per cubic yard	1.072
Cost per capita	.688

Disposal—Of the above 2,492,705 cubic yards, the following were delivered to pay dumps and platforms at various locations.

Pay Dumps	*Loads*	*Cubic Yards*
19th St. & Lincoln St.	147,855	757,203
104th St. & Lake Calumet	38,837	206,873
Grand Ave. & Narragansett Ave.	72,828	338,767
31st St. & Cicero Ave.	45,819	217,824
2647 W. Montrose Ave. (N. W. Disp.)	62,740	293,237
Touhy Ave. & Central Park Ave.	47,711	229,191

Pay Platforms	*Loads*	*Cubic Yards*
26th St. & I. C. R. R.	11,730	76,829
So. Water St. & I. C. R. R.	23,212	117,740
40th St. & Ashland Ave.	2,369	12,549

Cost of maintenance of dumps	$154,302.31
Cost to pay dumps and platforms	537,479.99
Cost per cubic-yard disposal	0.277

Ash and Refuse Collection

Ashes and non-combustible refuse from wards on the north and northwest sides were collected separately from the garbage and combustible refuse and taken to the incinerator, and this was hauled by the tractor-trailer trains to quarry-holes or to dumps on the northwest side of the city. Ashes, combustible household refuse, with some garbage, and non-combustible refuse from wards on the south and southwest sides, were collected by motor tractor-trailers. Part of this refuse is hauled to dumps, and the rest to loading stations on the south and southwest sides of the city, and thence by rail outside of the city. Rail transportation is done by contract. At present, all refuse is handled in this manner.

Final Disposal Problem

One of the perplexing problems in waste disposal is that of securing adequate dumping grounds, or low lands requiring filling, within reasonable traveling distance and of a capacity sufficient to care for the ashes and refuse from the major portion of the city.

There are available for limited use only a few dumps, located in the outlying wards. The future dumping problem points to sites located outside the city and reached only by rail. Cities with clay-holes, quarries, valleys and depressions should conserve these for future use. When scarcity confronts a city, the owners of such property soon are aware of its value and possession of the sites is difficult to obtain.

Small-Town Planning for the Future

By HENRY S. CHURCHILL
Architect and Site-Planner, New York

WITH the "coming boom in real estate" just around the corner, a terrific housing shortage impending, rents sky-rocketing, and all the other elements of uncontrolled speculation in evidence, the cities and towns will soon again be facing the full flood of "subdivision development." It seems pertinent to ask: What are they going to do about it?

The past history of such booms is not pretty. They have always and inevitably been followed by a collapse, in which the principal sufferers have been the municipality and the alleged "home owners." The municipality has been saddled with maintenance costs of unused improvements, falling on all the taxpayers; with actual or potential blighted areas; and with unkempt and haphazard sections that are neither productive farm land nor tax-paying suburbs. The "home owners," many of them, lose their homes, and the principal gainers are, as usual, the land gamblers and lending institutions.

Can any or all of this waste be prevented? The answer for the largest cities, where the situation is beyond adequate control, is none too hopeful. But for the smaller towns and villages which will feel the boom through the trend towards industrial decentralization, the answer may be yes, if early, wise provision for control is established.

Why Repeat Past Mistakes?

There is no reason why this should not be done. Proper planning for the future does not prevent expansion and the making of profits: it aims merely to channel expansion in such a way as not to injure the entire community, to see that those who make profits pay their share of added community costs, and do not, in the long run, do irreparable damage to their fellow citizens. This is not socialism, but just a lesson learned from the past; if it is not heeded, the old cycle of false prosperity through land speculation, and real depression through bankruptcy, will again be gone through.

The towns and villages which expect marked industrial growth would do well to establish a simple and easily comprehended city plan, based on the land uses of their immediate region. Arterial highways, railways, rivers and streams, farm land and waste land are essential parts of the picture. A development wisely planned and properly placed may lead to natural growth and a more pleasant city; otherwise it may bring blight and disaster Adequate provision for parks and recreation, for proper circulation of traffic, for schools and safety, must be made. There is nothing difficult or esoteric in this. Every tiny village in Sweden is thus set up, and nothing can be built there without relation to the established plan. That may be going too far—it is certainly too far for this country at present. But the principle is sound, and properly worked out should bring community dividends—as indeed it has to a few communities that have tried it and found simple solutions of old and bothersome problems.

The plan need not be elaborate, costly, or over-detailed, but it should be based on a sound and thorough analysis of all the factors, economic and social, that are involved. This can be done satisfactorily by a very small staff under adequate technical direction, with the aid of the already established city departments, welfare agencies, and civic bodies. Any tendency towards the "booster" type of plan should be discouraged; the endeavor should be to determine the cause and possible remedy of existing conditions of blight, traffic derangement, and misuse of land, with due regard for financial exigencies; and to predict future growth lines, appropriate control areas for the surrounding land, and suggest coordinate action with county and state authorities through regional plans and, if necessary, enabling legislation. The accent at all times should be on the promotion of a healthy city, which means health in economic terms as well as physical. That, in the long run, means profits for the community as a whole rather than sudden wealth for a few.

The time for making such plans is now, before the speculative fever takes full effect and prevents anything being done that might control it. It takes time to prepare plans, longer to obtain legislation, when legislation is required. In most cases, however, there is ample power in the municipality, and the regional questions can often be worked out with existing agencies. The future is to the forward-looking.

A Street-Maintenance Program Well Planned and Successful

By E. M. KNOX
City Manager, High Point, N. C.

HIGH POINT, one of the South's leading industrial cities, has grown very rapidly during the past thirty years, and its present population is now estimated at more than 48,000. During the decade from 1920 to 1930, the population increased 160 per cent and it was necessary to provide a great many miles of new streets.

During this period city officials were so busily occupied with the construction of new streets and other city facilities that very little attention was paid to the adequate maintenance of street surfaces, and it was not until the early part of 1929 that the necessity of inaugurating a regular system of street maintenance was realized. Many of the streets had developed hair-line cracks and pitted places, particularly those streets constructed with bituminous concrete surfacing.

Maintenance Program Established

A survey was made of all paved streets, and a detailed report was compiled, accurately indicating the condition of each block of pavement. Adequate funds were not available to completely recondition all streets and from this report a maintenance program, extending over a period of years, was formulated.

Until 1929, when the long-range maintenance program was inaugurated, all maintenance had consisted of the patching of holes and the applying of thin surface coating by use of the hand squeegee method, which not only resulted in uneven wear to the streets but actually caused an increase in the maintenance problem.

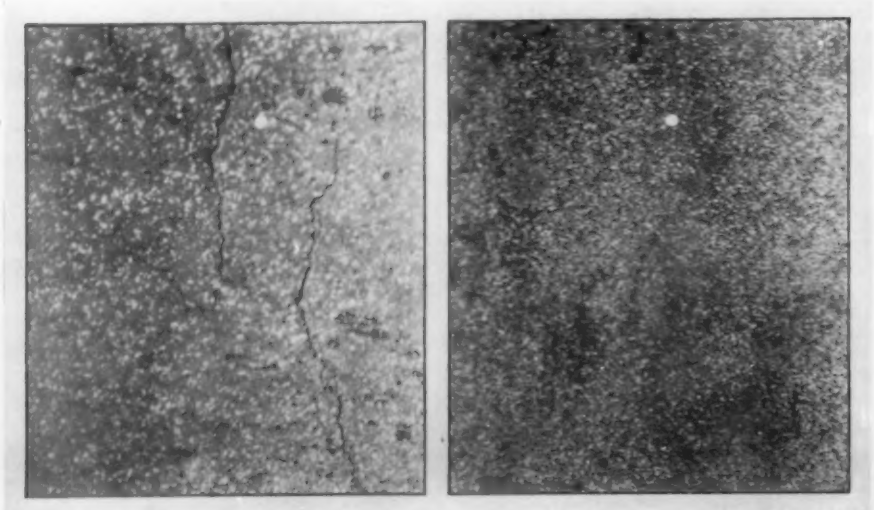
Since 1929 the city of High Point has carried on a regular maintenance program, except for the years 1931, 1932 and 1933, when maintenance moneys were cut out altogether. During 1929, 50,000 square yards of pavements were flushcoated; in 1930, 140,000 square yards; in 1934, 70,000; and in 1936, 160,000 square yards. It is now contemplated that this program will continue indefinitely.

In formulating plans for a long-range maintenance program on paved streets, it was decided to adopt a system of flushcoating or sealcoating, consisting of the distribution of bitumen over the entire street surface and covering it with chats, varying in size from $\frac{3}{8}$-inch to No. 10 mesh. The first year both asphalt and tar were used to provide a binder for the cover, and an excellent opportunity was afforded for observing the relative merits of the types of bituminous material.

After the first few months, it became plain that much better results were secured by the use of tar, and this material has been adopted as standard for work of this nature. Tar adheres with great tenacity to the asphalt and fills all the hair-line cracks and pitted places which are found so frequently in old Topeka and bitulithic pavements. The tar penetrates into the existing surface, sealing it for another period of approximately five years and making the pavement able to withstand heavy traffic. The tar treatment produces a smooth, gritty surface, which is considered necessary under modern traffic on crowded thoroughfares.

The use of tar flushcoating with the proper chat covering will unquestionably produce safer streets and highways, and motorists should be particularly interested in seeing the scope of this work greatly extended.

At the beginning of the program, an attempt was made to use granite chats, but some of this material was so brittle that it cracked under traffic and created objectionable dust for several days following its application on the



RESULTS OF MAINTAINING A HIGH POINT, N. C., STREET WITH TAR AND CHATS
Cracks are sealed and a uniform nonskid surface obtained

street, and after experimenting with this material for some time blue limestone material was adopted as a standard. By the use of Tarvia and limestone chats, it is possible to turn the traffic on the streets which have been flushcoated immediately after completion of the work without inconvenience to householders from dust or from sticky, messy areas of the surface. The cost of this work since 1929 has averaged 9.6 cents per square yard.

Methods in Detail

It is relatively easy to secure a satisfactory job of flushcoating if a few simple rules are carefully observed and if modern equipment is used. In order to secure the best results, this type of work should not be done in the winter months, because during this period the tar will not penetrate deep enough into the old pavement to provide the maximum bond between it and the new surface. Before applying the flushcoating, the street should be thoroughly cleaned, removing all leaves, dirt and other débris as well as grease spots in parking areas where dirt and dust have collected. After the street has been thoroughly cleaned, it should be carefully checked, all holes patched, and low spots built up to the original surface. The large cracks should be filled with some type of crack-filler, and Tarvia XC has been found entirely satisfactory for this purpose.

For regular flushcoat work where it is desired to rejuvenate the old pavement in order to provide an adequate bond, it has been found necessary to apply from 0.3- to 0.4-gallon of Tarvia A per square yard. Following the application of the Tarvia, 18 to 25 pounds of limestone chats per square yard were then evenly distributed over the entire street. The street was then swept with a light broom drawn by a service truck, until the cover material was smooth and even. Following the sweeping procedure process, the street was rolled with a 5-ton three-wheel or tandem roller in such manner that the cover material was rolled from the outside toward the center with wide roller laps. One rolling is usually considered adequate.

In some instances 0.25-gallon of tar per square yard has been found adequate for satisfactory results, but this method has been used almost exclusively for the second treatment, which is normally necessary about every five years.

The selection of materials and equipment for this work is exceedingly important. A satisfactory flushcoating treatment cannot be given unless an even distribution of bitumen and cover material is obtained. There are several grades of tar now being sold on the market, and the proper type to use varies with the class and condition of the old pavement, requiring an expert in this type of work if the maximum service is to be obtained from the treatment. In order to assure an even distribution of the bitumen, an insulated air-pressure distributor manned by a competent operator is required, and a very careful check should be maintained at all times in order to be certain that the material is applied at temperatures of 190 to 225 degrees F.

City Planners and Civic Planners

DESCRIBING city planners as trained technicians in the physical development of urban areas, and civic planners as leaders in citizen guidance for general community improvement, A. P. Greensfelder, of St. Louis, made a strong plea for "The Rebuilding of Balanced Cities" before the Fifteenth Annual Session of the National Institute of Commercial and Trade Organization Secretaries at Northwestern University, Evanston, Ill. Speaking as Director and Chairman of the Construction and Civic Development Department Committee of the Chamber of Commerce of the United States, Mr. Greensfelder said, in part:

"Today, no body of business men can be called progressive who have not related their business processes to their environment. It no longer suffices to merely measure the success of a chamber of commerce in number of members, population, or volume of business. There has of necessity developed a civic consciousness to make and maintain their cities and suburbs a better place in which to work, live and play. In other words, bigness and 'betterness' have become interdependent. It no longer permits a city to brag of its business opportunities without accentuating its civic development.

"City planners and civic planners should complement each other. Their problems are supplementary. The technician talks of base-maps, objective research and logically planned improvements. The civic planners should encourage and support sound city planning and demand that the 'City Fathers' engage, permanently, able city planners, pay them adequately, provide them with sufficient staff and budget, and then, last but not least, follow their plans. Brains are the cheapest matter that money can buy. Business men know this axiom and apply it to their individual businesses. They, however, seldom demand the same rule for their collective business of municipal development.

"On the other hand, the usual technician must necessarily so keep his mind on his technical projects that he rarely can devote the necessary time and effort to sell those projects to the people. That is where his ally, the civic planner, comes in. Like park technicians,—let's call them 'parkitects,'—and the laymen interested in parks,—let's name them 'parksmen,'—both the city planner and the civic planner are definitely needed to assure us plenty of outdoor parks of various kinds.

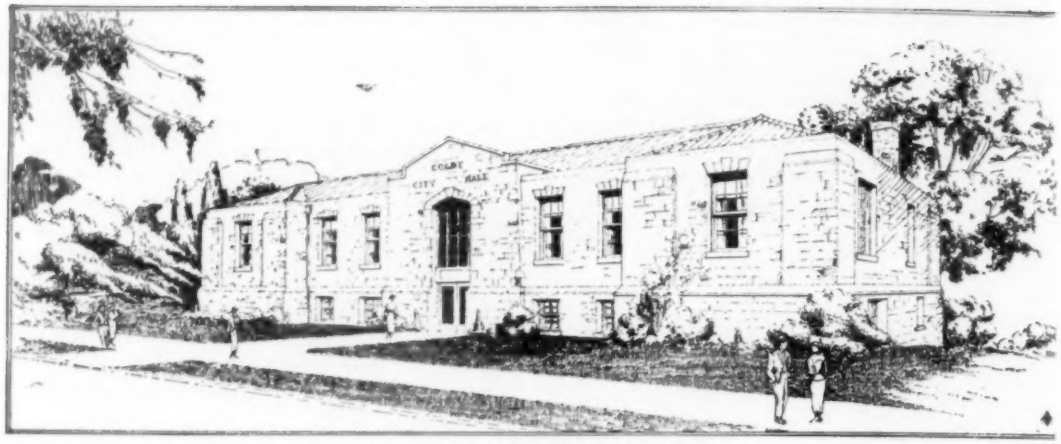
"The task of the civic planner is to arouse and maintain human interest in the city planner's projects as well as in civic celebrations, municipal or community music and recreation. No city is *ever* finished. In most, the civic developments are just beginning in earnest.

"Most cities are just now coming to realize that they can obtain or maintain their places in the sun only by doing either some or all of the modernizing so vital to community welfare. They must renovize, reurbanize, suburbanize, or decentralize. No community can stand still. . . .

"How far and fast you will improve existing environments depends largely upon your energy, vision and salesmanship. Parks are cheaper than prisons and pay dividends in delight. Slums of despair must be replaced. The rehousing of America is a stupendous enterprise. Saving of men, miles and minutes will warrant many separations of ways. Parkways, green belts, municipal plazas, are realistic needs to save cities from themselves and for their posterity. Libraries, hospitals and similar institutions are modern necessities, not luxuries.

"Rezoning, replatting, replanning and rebuilding of our cities calls for civic planners with imagination and true perspective. America has plenty of such."

Mr. Greensfelder also quoted several paragraphs from the report of his committee on "Balanced Rebuilding of Cities," sixteen specific suggestions from which were published in THE AMERICAN CITY for May, 1937. The full report is available from the Construction and Civic Development Department Committee of the Chamber of Commerce of the United States, Washington, D. C.



CITY HALL - COLBY KANSAS

W.P.A. PROJECT NO. 348 — WORKS PROGRESS ADMINISTRATION OF KANSAS — JUNE 8 1936

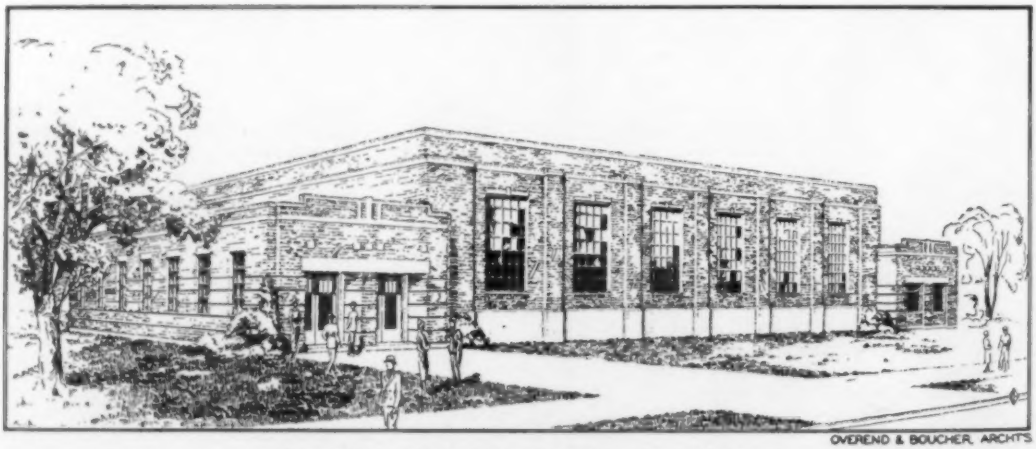
City Buildings Constructed Under WPA Program in Kansas

By JOHN E. BRINK
Deputy Administrator, Works Progress Administration, Kansas

THE value of the work program as it is being conducted by the Works Progress Administration lies in its dual benefit to society at large: first, the benefit to the persons employed, by allowing them to earn a livelihood, provide for their dependents and, in many cases, maintain their skills; second, the tangible benefit of the products of labor and funds to the community in which the job is prosecuted.

Naturally, the quality of any building program depends on the care exercised in planning and on adequate funds. City buildings have certain definite requirements that can be met only by proper plan and design; each job may present a different problem, yet withal the fundamentals are similar on all jobs of equal or nearly equal size.

A city hall is a structure erected to house city employees and provide adequate work space wherein this personnel can carry on the business of the city. There is no actual justification for delving into the realm of monumental building when considering and studying the requisites of housing the city's seat of business operations. The problem is one of housing employees, office equipment and records, and providing well-laid-out access space such as corridors and general public space in such a way that the citizens can conduct their business with a minimum of time and confusion. Funds expended to provide anything additional are wasted. It should be a matter of assumption that, to plan and design public buildings, the responsible public officials will select technical personnel who



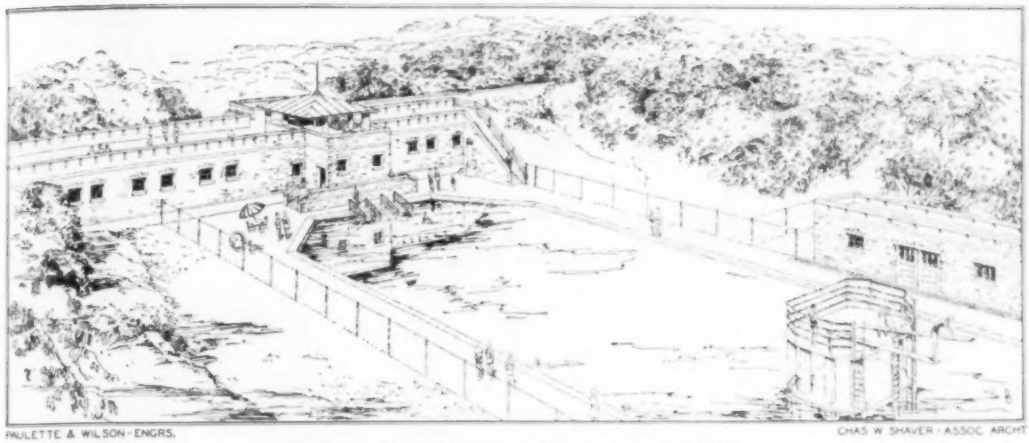
OVEREND & BOUCHER, ARCHTS.

AUDITORIUM AND GYMNASIUM - MULVANE KANSAS

OCTOBER 1, 1936
MULVANE, KANSAS

MULVANE CITY W.P.A. PROJECT NO. 3837

WORKS PROGRESS ADMINISTRATION OF KANSAS



PAULETTE & WILSON - ENGRS.

CHAS W SHAVER - ASSOC. ARCHT

SWIMMING POOL AND BATH HOUSE - HOLTON KANSAS
HOLTON CITY W.P.A. PROJECT NO. 2036

OCTOBER 20, 1936
JACKSON COUNTY, KANSAS

WORKS PROGRESS ADMINISTRATION OF KANSAS

will make effective use of modern building materials and consequently of public funds.

The accompanying delineations illustrate the type of city buildings constructed under the WPA program in Kansas. These buildings are properly planned and, while no attempt has been made to design monuments, it is readily seen that consideration has been given to exterior appearance.

Work of good quality has been the general result. In a number of instances, the use of local stone as the principal material for exterior walls has reduced costs other than for labor, and has made possible a wider spread in this phase of the program. By making a careful analysis of available labor that was certified to WPA prior to initiating plans and project applications, delays and incompleted structures have been entirely avoided. In other words, each city building project has been planned as an integral part of the county work program, the county being the basic unit in Kansas used by the WPA. By following such a policy and by scheduling labor and material requirements, provided by Federal and local governments, the city projects in general have enjoyed uninterrupted operation.

In order to insure completion, it is necessary that both Federal and city officials study carefully all elements on such a job: labor, skilled and unskilled, materials locally and foreign processed, time limits, working time (allowing for time lost during inclement periods), and the advance scheduling of all items necessary to smooth operation.

Too much stress cannot be laid on proper planning, and I mean by this not only the preparation of good plans and specifications, but of all items such as the scheduling of daily operation as to labor required, by classification, and of materials. The latter element is extremely important, especially in cases where any portion of materials is supplied by the Federal Government and must be purchased through the Procurement Division and by Government contract. Ample time must be allowed for securing bids and transportation.

The construction of city buildings under the WPA program is a problem of fitting together of functional elements by the use of common sense and experience. This being done, it follows that good plans, plus the necessary labor and supervision, will always result in a sound product.

A total of 344 public buildings have been constructed or reconstructed in Kansas under the WPA program. Of this number, 73 have been city buildings.

When Wholesome Sport Was Taboo

LONG before objectionable burlesque became the target of censors, authorities were clamping down on popular amusements, including such exceptionally wholesome sports as golf, basketball, bowling, fencing, ice skating, and shuffleboard.

As long ago as 1457 the rulers of Scotland forbade all citizens to play golf, according to findings of research workers of the WPA Federal Writers' Project of New York City. The law was enforced not to ease the lot of golf widows, but because the game was becoming so popular that it took men away from archery practice, thereby weakening the national defense.

In 1592 another anti-golf bill was passed prohibiting residents of Edinburgh from playing "goff" on Sunday. King James of Scotland put an end to this ordinance in 1618. He rebuked "precise people" for the ban, explaining that only on Sunday could the "common man spend much pastyme at goff," indicating that golf was then as widely played by the poor as the rich.

Basketball proved to be so rough when first inaugurated in the '90s that it was outlawed by numerous schools, including Cornell University.

Bowling created such a gambling fever at one time in New York that the sport of "nine pins" was banned. Early keglers read the law and jumped through a loophole by adding another pin. That's why ten pins are now used in bowling.

Fencing, now the sport of some of our best people, was outlawed in England in 1286 on the grounds that it was practiced principally by "profligates who were thereby emboldened to commit the most unheard of villanies."

Even ice skating has been in disrepute. In 1862, a minister who practiced for Brooklyn's first ice carnival was severely rebuked by his elders, and churchmen banned the sport under pain of mortal sin.

Shuffleboard was outlawed by Henry VIII during his reign because it drew recruits from the longbow tournaments.

In recent years college football, cock-fighting, dog racing, prize-fighting, and, of course, the lowly game of dice, have been prohibited at various times and places by public or private agencies.

New Primary Treatment Plant for the Sewage of New Haven

Proposed Plant Meets Requirements of State Water Commission for Effluent

THE State Water Commission of Connecticut, to which is entrusted the care and analysis of all waters of the state, ordered treatment of the sewage of New Haven which "would produce a purified and chlorinated effluent having suspended solids content reduced not less than 60 per cent, and oxygen demand reduced not less than 30 per cent, as compared with corresponding suspending solids content and oxygen demand of the raw sewage." It was likewise required that the sludge produced be destroyed by incineration, and the right was reserved to require a higher degree of purification in the future, should it become necessary.

While this order does not require complete treatment of the sewage, the degree of treatment specified will be sufficient to eliminate visible evidence of sewage from waters of the western portion of New Haven harbor, materially reduce the general pollution load of the entire harbor, prevent formation of sludge beds on the bottom, and diminish bacterial pollution of bathing beaches and shellfish layings at the mouth of the harbor. This degree of treatment is approximately the limit of purification generally accepted as obtainable under the most favorable conditions by plain sedimentation of sewage and chlorination of the effluent.

Plant to Serve Large Area

The area tributary to the Boulevard trunk sewer comprises the western and northwestern portions of the city, which will require a treatment plant for a population of 82,500 with an average sewage flow of 8.5 million gallons daily.

The Meadow and State Street trunk sewers, which will also deliver sewage to this plant, serve well-developed districts in the central portion of the city which are mainly commercial and industrial in character. This area has a contributing population of 25,000 and an average sewage flow of 5.25 million gallons daily.

After reviewing present and probable future conditions, it was decided to build a plain sedimentation plant with chlorination of the effluent and to pump the raw sewage to high-level sedimentation tanks having their water surface above the elevation of maximum high tide, so that the efficiency of operation will not be subject to interference by changing tide levels in the harbor.

Outline of Treatment

The treatment planned at New Haven will consist of the reduction of the coarser floating solids by screening and shredding or by comminutors; removal of sand and grit; chlorination to reduce the bacterial content and prevent putrefaction of organic matter; sedimentation to remove a major part of the finer suspended and settleable solids; digestion of solids removed by sedimentation to destroy low volatile organic matter; partial dehydration of the sludge by vacuum filters; and final destruction of organic matter in the sludge in a high temperature incinerator.

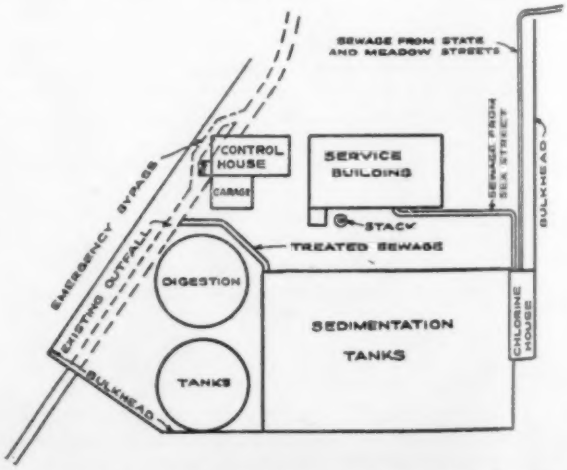
The final effluent will be dispersed in the deeper water near the pier-head line. Gas generated by the digestion of the sludge can be used for heating the digestion tanks, or it can be used in gas-driven electric generators to produce electric current for operating the various motors in the treatment plant.

Consideration was given to the adoption of other types of treatment plants as alternates. The processes considered included chemical treatment and mechanical filtration of the effluent from the plain sedimentation process. Based on the order of the State Water Commission, these types are more elaborate than necessary.

Description of the Plant

The plant will consist of four main structures—the control house, the service building, sedimentation tanks, and sludge digestion tanks.

The control house will be a one-story brick and concrete structure, 24 feet by 48 feet. It will contain: an emergency bypass, the automatically controlled main gate for diverting the dry-weather sewage flow and first flush of storm water to the plant, and passing excess storm water into the existing outfall; the mechanically cleaned bar



ENGINEERS' PLAN FOR THE PROPOSED SEWAGE-TREATMENT PLANT AT CITY POINT, NEW HAVEN

screen and a hand-cleaned duplicate screen;; the grinder or shredder for reducing larger organic solids, rags and the like; mechanism for cleaning the grit chamber; the grit washer for removing and cleaning street washings and other mineral matter carried by the sewage, particularly in times of storm; and the mechanism for the Parshall flume which will measure the volume of sewage entering the plant, and actuates the mechanism controlling the storm-water diversion. A garage will also be provided as an addition to the building. A portion of the grit chamber channel and the Parshall flume will extend beyond the building wall into the basement of the adjoining service building, and will be topped with a concrete slab equipped with convenient manholes for access.

The main service building will be a two-story and basement, brick and concrete structure 48 feet by 90 feet in plan. The basement will extend under the entire structure and contain the pump well, pump room for the main sewage pumps, sludge concentrating and elevating equipment, sludge pumps, filtrate pumps, piping, ash-handling equipment, pre-heaters, blowers and drive motors for the sludge incinerators, and heating plants for the building and sludge digestion tanks, with other auxiliary equipment.

There will be four main sewage pumps, one with a capacity of 4.25 mgd, and three having capacities of 8.5 mgd. The pumps will be automatically operated and so controlled as to be capable of handling flows ranging from low dry-weather to storm maximum, with one unit in reserve for emergency.

The main floor will contain the office, laboratory, pump motors, switchboard, vacuum pumps and blowers, toilet, shop and incinerator with space for gas holders for installation when the gas produced in the digestion tanks exceeds the quantity needed for heating these units and for make-up fuel in the incinerator as well as for generating electricity to take the place of a part or all of the purchased power.

The second floor will contain the vacuum filters, the sludge conditioning equipment, the charging equipment for the incinerator, chemical solution equipment and chemical storage bins. The bin for ashes from the incinerator and the stack will be in the rear of the building.

The mixing manholes will be located at the inlet end of the sedimentation tanks and permit mixing of the sewage from the different pumping plants. Above the mixing manhole will be a brick superstructure with equipment for storing, weighing and applying chlorine gas in solution from May 15 to October 15 each year. Chlorine gas will be purchased in one-ton containers and there will be two chlorine control machines each having a capacity of 2,000 pounds daily.

Four Sedimentation Tanks

The four main sedimentation tanks will be of reinforced concrete construction, each 145 feet long by 23 feet wide inside measurement, with a water depth of 11 feet 6 inches, giving a sedimentation period of two hours for the average dry-weather flow of 13.7 mg anticipated in future years, and a period of one hour for control storm flow at double this rate.

Each tank will be provided with individually operated mechanical scrapers for concentrating the settled sludge and carrying it to hoppers, from which it will be withdrawn by sludge pumps in the service building. The tanks will also have equipment for skimming and removing the grease floating to the surface. Suitable valve, weir and piping arrangements will provide for the operation of any or all tanks at such rates as may be desired, and for the distribution of the flow so as to promptly check incoming velocities and prevent short-circuiting.

The main venturi meter for measuring and recording the entire flow passing through the plant will be at the outlet end of the tanks. Indicators will be located in the chlorine room and on the operating floor of the service building.

The sludge withdrawn from the sedimentation tanks will contain a large proportion of low volatile organic matter, and would become offensive on exposure during warm weather. Accordingly, multiple covered sludge digestion tanks are to be installed in which the sludge will be digested for a period of approximately 30 days and thus freed of odor-producing gases. These tanks will also serve as equalizing devices to smooth peaks in sludge production and to provide facilities for the storage of sludge during periods when the sludge filters and incinerators are not in service. The tanks will be of reinforced concrete construction, two in number, 55 feet in diameter, 21 feet effective depth, and will have a total capacity of 92,000 cubic feet. Gas given off during digestion will be collected and used for heating the digestion tanks and for heating the building during the winter months, or for make-up fuel in the incinerator. Piping arrangements will permit either separate or two-stage operation of the digestion tanks.

The digested sludge remaining in the tanks will be carried to the sludge conditioning tank located on the second floor of the service building. After the addition of chemicals, it will be conveyed to the vacuum filters, where the moisture content will be reduced to between 60 and 70 per cent, and the cake thus produced will be discharged by a belt conveyor into an incinerator. There it will be destroyed by burning, and the residue, a powdery ash, will be stored in a bin. This ash may be used for fill or for sanding slippery pavements.

—From a report by W. VINCENT BARRY, City Engineer, New Haven, Conn., in *Health*, the New Haven Department of Health publication.

National Politics and Local Elections

FROM a plea for doing everything possible to keep partisanship out of municipal elections, in *The Civic Searchlight*, the bulletin of the Detroit Citizens League:

NEW YORK—AND DETROIT

If the truth were fully known, Detroit as well as New York, and no doubt other cities, this year is facing a local election in which local issues and problems, local charter forms and practices, face the danger of being submerged in a turmoil of national, industrial and social controversies with which our city government, as such, has nothing directly to do.

But it will not be the first time that local government was sacrificed on the altar of national politics. In fact, most of the larger cities always struggle under the vast load of partisan, national and machine politics. Real home rule and nonpartisanship are unknown. It was this condition that forced Cleveland out of the city-manager classification. Every two years Cincinnati must fight for its local independence as against the bi-partisan gang which still hopes again to control local affairs.

GIANT TIRES MOVE MOUNTAIN

by LOWELL THOMAS,
NEWS COMMENTATOR

● "They're cutting down Iron Mountain and hauling it away on Goodrich Tires. It's in

Shasta County, California. A mountain of low grade gold ore called 'Gossan,' heavy in iron.

"First they blast to loosen the ore. Then big shovels scoop up earth, drop it in huge trucks for the haul to the mill.

"No ordinary trucks are these. They're big fellows with specially-built bodies reinforced with *steel rails*. Bodies so rugged that they stand the crushing jolt of a three or four-ton boulder dropped from the shovel.

"Tires, too, must take terrific battering. No chance to reinforce with steel here—just rubber and fabric to take the shock—to carry 20-ton loads over sharp, jagged rocks. Trucks fight for a footing—wind their way down the mountain—the tremendous weight shifting from one tire to another—all in all a tire job believed impossible only two or three years ago. But these are Goodrich Silvertowns—'earth movers' weighing almost 500 pounds apiece. Tires developed by Goodrich engineers for just such service. They tell me these tires have a load capacity as high as nine tons each—that they provide super-traction—that this is one of the greatest achievements of tire engineers."

* * *

Not many truck owners have jobs such as this at Iron Mountain. But every owner wants to get the same long mileage, freedom from delays and low cost of operation.

Goodrich Truck Tires give that kind of service on every job. The same basic construction that makes the tires stand up on the job of moving Iron Mountain is now used in every Goodrich Silvertown! On your hauls, whatever they may be, you can now get long, trouble-free mileage at new low cost.

TIRES TRIPLE PROTECTED

It's because these truck tires are Triple Protected in the sidewall. Built with an invention that checks 80% of premature failures. Only Goodrich gives you this 3-way safeguard:

1 **PLYFLEX**—distributes stresses throughout the tire—prevents ply separation—checks local weakness.

2 **PLY-LOCK**—protects the tire from breaks caused by short plies tearing loose above the bead.

3 **100% FULL-FLOATING CORD**—eliminates cross cords from *all* plies—reduces heat in the tire 12%.

When you can get these tires without paying a penny premium, can you afford to take chances on tires without Triple Protection? See a Goodrich dealer today—ask him to give you proof of savings.

Goodrich *Triple Protected* **Silvertowns**

SPECIFY THESE NEW SILVERTOWN TIRES FOR TRUCKS AND BUSES

Police Patrols Extinguish Crime and Fire

By IRA A. MANDERBAUGH
Chief of Police, Canton, Ohio

IN dedicating the new two-way radio system, Mayor James Secombe of Canton said to the police radio motor patrol squad: "We have given you the best equipment money can buy and we want you to use it in the service of the taxpayer. You have everything necessary for good work, and it is up to you to prove this a good investment."

The system is operated by remote control from headquarters. The 50-watt Western Electric ultra-high frequency transmitter and a receiver are installed on the roof of the First National Bank building. A special structure was erected to house this equipment. The antenna, also installed on the roof, is approximately 230 feet in the air.

From this building direct lines lead to police headquarters, where an amplifier and loud speaker set are installed. There is in addition a receiver tuned to 1,596 kc, which is the frequency of the Ohio State Patrol station WPHC at Massillon. Thus Canton is in direct communication with an agency which can reach all Ohio state troopers, sheriffs of surrounding counties, and other states. The radio department handles over 40 calls a day, and the average time required to answer a call is 2¼ minutes.

Sixteen police cruisers and a specially constructed bandit sedan comprise the motor patrol fleet. Car transmitters as well as the headquarters' transmitter are crystal-controlled. Eleven cruisers, assigned to strategic positions around the city, are in operation 24 hours a day. These are supplied with fire extinguishers, sawed-off shotguns, rifles, night sticks, flares, tear-gas pistols and gas masks, in addition to the regular revolvers and blackjacks ordinarily carried by members of the force. A twelfth car is held in reserve at headquarters for emergency use and for special-call runs. Each of these cars bears the words, "Radio Patrol."

Nine cars without insignia are at the disposal of the detective bureau. A tenth car is used entirely by the vice squad. The bandit sedan is stationed at police headquarters and goes out only on bandit calls. For this type of service the car has bullet-proof body and glass as well as a sub-machine gun, a tear-gas gun, two shotguns and rifles, a portable spotlight, and gas masks. Portholes are provided for firing.

Helping the Fire Department

For the first time in the history of the Canton Police Department, the cruisers are being used as an auxiliary to

LEFT—AN OFFICER LISTENS AND ANSWERS. RIGHT—ENGINEER S. WALKER, OF CANTON POLICE, SHOWS HOW EASILY A CAR TRANSMITTER CAN BE REMOVED FROM ITS METAL CABINET FOR INSPECTION

New York Buys 75 *"SOUTH BEND"* Street Flushers

Finds Flushing Most Sanitary Street-Cleaning Method

Pictured above is one of a fleet of 75 new **"South Bend"** Street Flushers purchased by New York City. Previously, 50 had been purchased, making a total of 125 **"South Bend"** Flushers in street-cleaning service helping to make New York one of the "cleanest cities in the world." Such recognition of flushing as the most sanitary and economical street-cleaning method is most significant. **Your** city can use street flushers as profitably as New York does. Investigate the advantages of street-flushing now. Write for complete information relative to the famous **"South Bend"** Street Flushers.

Municipal Supply Company, South Bend, Ind.

the Fire Department. Each car carries a 2-gallon fire extinguisher and two small extinguishers. Cruisers answer all fire calls. Since such calls are transmitted directly to the cars by radio, thereby enabling them to reach the scene almost immediately, radio patrolmen frequently put out fires before they get too far under way. In some cases this avoids the necessity for calling out an entire fire company, and thus a decided saving in municipal expense is effected. Plans are in progress to install a receiver in the fire chief's car so that when he is on a fire call radio police may communicate with him.

All cars are serviced regularly and frequency is checked constantly. Batteries are washed weekly and new grease is applied to terminals to prevent corrosion. Since the system went into operation, we have not changed half a dozen batteries. The headquarters transmitter is inspected daily to make sure of good service. I cannot praise the system too highly. It has rendered a great public service and will do an even better job when all the duties it can perform have been thoroughly worked out through careful study by the Department.

The traffic department has been supplied with ten new motorcycles, which we expect to equip with radio receiving sets tuned to the frequency of our station, when finances permit. Thus the motorcycle officers will respond to important calls.

Needed: A Municipal Parking Code*

By NILES ANDERSON
Secretary, Better Traffic Committee,
Pittsburgh, Pa.

WHEN an attempt is made to erect a many-family apartment house in a single-family residence district, Rule A on page 5 of the Zoning Code prohibits the structure.

When an attempt is made to wire a house with a 10-cent store variety of poorly insulated electric cable, the Building Code prohibits the wiring.

When a new lavatory is to be put into a private house, the Sanitary Code prescribes the manner of erection.

Art commissions, zoning boards, plumbing inspectors and many other quasi-governmental groups are arbiters of commercial life in modern cities.

What is more reasonable, then, than that a Parking Code be developed, into which the hodge-podge of requests for varied parking regulations might be conveniently classified and ruled upon?

A preliminary attempt to formulate such a code by the Better Traffic Committee of Pittsburgh is presented below. It starts with basic parking principles, on the acceptance of which the proposed rulings of the Code are based.

Parking Principles

1. City streets are public property for the use of moving traffic, pedestrian and vehicular. Street parking is a privilege, not a right.

2. All streets should provide for at least two uninterrupted moving lanes of traffic, on one-way as well as on two-way streets.

Corollary. Parking may only be permitted to the extent that it does not abridge the requirement of two lanes for moving traffic. A moving lane is assumed to be 10 feet wide, or 9 feet in business districts; a parked car occupies a lane width of 7 feet.

3. The street is not a stable; every automobile should have its private off-street lodging place.

Corollary A. All-day street parking should be prohibited.

Corollary B. All-night street parking should be prohibited.

Corollary C. Apartment houses and hotels should provide off-street parking facilities adequate for expected tenantry and guests.

4. The street is not a place to conduct business.

Corollary. Off-street merchandise loading provisions should be incorporated in every factory, apartment and office building, and other commercial structures.

5. Parking prohibitions and limitations, to afford the greatest good for the greatest number, should be adopted from the standpoints, in order, of (1) safety need, (2) traffic flow need, and (3) business desires.

Example (1)—Prohibitions at fire-plugs and intersections, double parking, parking with right side next to curb, etc.

Example (2)—Prohibitions to secure additional moving lanes, all day or during certain hours; prohibitions of merchandise loading and unloading.

Example (3)—Loading zones, limited time restrictions to promote customer turn-over, etc.

Parking Code Provisions

I. *Congested Business District*:

Definition: "A Congested Business District is a district almost entirely commercial in character, where elements of congestion combine to reduce vehicular speeds in moving lanes to an average of less than 15 miles per hour."

Regulation:

(a) *General*—No parking at any time.

(b) *Special*—No stopping at any time, if flow needs so demand.

1. As a peak-hour regulation.
2. As an all-day regulation.
3. To apply to truck stopping only.
4. To apply to all stopping.

II. *Business District*:

Definition: "A Business District is a district where more than 50 per cent of first-floor property adjacent to a public highway is commercial in character, but which does not come within the definition of a Congested Business District."

Regulation:

(a) *General*—One-hour limited-time parking.

(b) *Special*—Peak hour prohibitions, if flow needs so demand.

1. Parking prohibitions.
2. Stopping prohibitions.

III. *Residential District*:

Definition: "A Residential District is a district not coming within the definitions of Congested Business or Business Districts."

Regulation: General parking principles apply.

* In this suggested code the term "parking" is used in the same sense as in the "Model Traffic Ordinances" published in 1934 by the National Conference on Street and Highway Safety. Its exact wording of this definition is: "The standing of a vehicle, whether occupied or not, otherwise than temporarily for the purpose of, and while actually engaged in, loading or unloading."

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Maintenance of Sewage Comminutors

Cutters and Lubrication Require Attention

By A. C. DURDIN, III, and MILTON SPIEGEL
Sanitary Engineers, Chicago Pump Company, Chicago, Ill.

A SEWAGE comminutor is a precision machine, placed in the raw-sewage influent channel, which converts coarse sewage material, such as rags, large fecal solids and other débris commonly found in sewage, into small settleable solids beneath the flow line in the sewage channel. The comminuted material then flows to the primary settling tank, where sedimentation of these, and the finer solids in the raw sewage, takes place. The primary sludge containing the comminuted solids is pumped to the digester.

The maintenance of a comminutor comprises the periodic inspection and rotation of the cutters, checking and changing the oil in the gear reducer, and lubrication of the shaft and motor bearings through a pressure greasing system.

Cutter Inspection

The Stellited cutters on the comminutor drum are extremely hard and have a slow "dulling" rate. However, it must be recognized that no matter what material is employed on any apparatus which cuts or shears, dullness does occur in time, depending on the material cut. The maintenance of the comminutor cutters is governed by the presence or absence of grit in the sewage flowing through the comminutor. In some cases, where grit chambers have not been employed, all the grit reaches the comminutors. In other cases, grit chambers or mechanical grit-removal apparatus is installed below the comminutor.

At every comminutor installation, the plant operator should inspect and change the position of the cutters on the drum once a month. His visual inspection of the condition of the cutters will give him the best key as to the condition of the sewage with respect to its effect upon the cutters. The comb through which the comminutor cutters pass also performs a cutting action, being similar to one blade of a pair of scissors. The condition of the comb should also be inspected. The time required for inspection and rotation of the position of the comminutor cutters on the drum requires only about one hour a month on the average size comminutor. All comminutor installations are provided with stop gates and emergency bypasses for use while this work is being done. When the bottom cutters which do most of the work are found to be dull, the operator can replace the cutters from the extra set supplied with each comminutor.

At plants where the sewage flowing to the comminutor is relatively free from large pieces of gritty material, it has been observed that the cutters do not need replacement for periods varying from one to two years from the time of installation.

If comminutor cutters are allowed to become dull, the cutting action is lost and the material is shredded instead of being cut into small pieces. Some of the shredded material will be wedged between the cutting comb and the drum before passing through the drum slots, thus introducing a wearing effect on the drum surface.

Lubrication

The manufacturers of the standard comminutor motors and gear reducers have recommended an S.A.E. No. 160 oil for normal operation of gear boxes for conditions of 5° F. above zero. Where the comminutors are installed outside and exposed to the cold, this grade of oil becomes too heavy for winter operation. Accordingly, the motor manufacturers have recommended S.A.E. No. oils as follows: No. 110 for 5° F. below zero; No. 90 for 10° F. below zero; and No. 80 for 25° F. below zero. They have also recommended, in general, that the oil should be changed after every 2,500 hours of operation, or every three months when operation is continuous.

The comminutor shaft ball bearings should be lubricated with grease every other week. Greasing is effected through a high-pressure greasing nipple, located above the motor plate, and a ¼-inch pipe line connected to the bearing. Four ounces of good waterproof, mineral base, ball-bearing grease is sufficient for each lubrication. The excess grease collects in the bearing column and serves as a seal to prevent water from working its way up into the bearing.

The motor bearings should be lubricated through the high-pressure greasing system once a month.

Maintaining Sewers and Catch-Basins

THE combined storm-water and sanitary sewer system of the village of Oak Park, Ill., is maintained by the Street Department. Maintenance consists of cleaning the main sewers whenever necessary, particularly those with a flat grade. All catch-basins on the sewer system are cleaned once a year, and more often in special locations where necessary.

Cleaning of the main sewers is done with a sewer-cleaning machine consisting of rotating flexible steel rods with cutting and cleaning tools. Catch-basins are cleaned with an Elgin Auto Eductor.

During 1936 a considerable number of complaints were received because of the stoppage of house drains and catch-basin connections by the roots of popular trees. There were 118 cases in 1936 where the Street Department had to rod out and clean out sewer stubs. In about 50 per cent of these locations the trouble was due to the drain's being filled with tree roots, principally poplar tree roots.

All dirt from catch-basins is hauled to the village dump. During 1936 there were 969 catch-basins cleaned, resulting in the removal of 625 cubic yards of dirt. The cost per catch-basin was $1.19. Labor cost, $808.58; superintendence, $70.30; trucks, $162.03; equipment repairs, $112.13; a total of $1,153.04.

CARY E. DEBUTTS,
Commissioner of Public Works.

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Actions of Health Officers Invalidated by the Courts

By JAMES A. TOBEY, Dr. P.H.
Member of the New York Bar

HEALTH officers in the United States and Canada possess wide but not unlimited authority. As ministerial officers of the state, it is their duty to enforce impartially all laws and regulations for the protection of the public health, and to take all necessary and reasonable measures to that end. In the proper exercise of the police power they may also take summary action, provided that it is justified by the exigencies of the occasion.[1]

Every action by a health officer is, however, subject to review and adjudication by the courts. Under the Federal and the various state constitutions, no person may be legally deprived of life, liberty, or property without due process of law, nor denied the equal protection of the laws. In cases of public necessity, there may be a legitimate interference with these rights, but any violation of these and other constitutional privileges through improper legislative enactments or administrative procedures entitles an aggrieved citizen to an immediate judicial determination of his lawful rights and privileges.

On numerous occasions citizens have invoked the aid of the courts in legal causes brought against health regulations and health officials. In exercising their jurisdiction in these matters, the court will allow every intendment in favor of health laws, since it is peculiarly the province of legislatures to determine the need for public health legislation. The courts will, however, decide whether an enactment has a real and valid relation to the public health, and whether the measures taken for its enforcement are proper, reasonable, and appropriate to its purpose.

Arbitrary Acts Invalid

On those rare occasions when the action of a health officer can be proven to be arbitrary, oppressive, capricious, partial, unreasonable, malicious, or dishonest, such an action will be adjudicated as invalid. The action, or even a proposed or announced procedure, may be enjoined by the court, or if injury has already been done, substantial damages may be awarded to the person or persons harmed.

No attempt will be made here to describe the large number of court decisions in which health laws and regulations have been declared void for various legal reasons, but an outline of some of the leading decisions against health officers, with a discussion of the legal principles involved, may be helpful to public health and other municipal administrators. The prevention of litigation and the avoidance of costly judgments for personal liability are as much to be desired as are the prevention and control of diseases.

Illegal Actions

Where the law specifically sets forth the procedure to be followed by a health officer in controlling a communicable disease, in abating a nuisance, or in undertaking any other measures to protect the public health, he must comply with that procedure, unless summary action is essential to the public welfare, and its necessity can be proved.

In an early case, a health officer who had quarantined a smallpox patient in a boarding-house and had seized and destroyed a quantity of furniture and other property, without obtaining the necessary warrant, was held to have been personally liable.[2] Even if all he did was done honestly, said the Court, he must act only within the authority given him by statute. In a somewhat similar case, a judgment was awarded against the members of a board of health for seizing a house and using it as a smallpox hospital without securing a warrant for that purpose.[3]

Where a local board of health properly hired a building for a smallpox isolation hospital, but maintained it in such a negligent and careless manner that damage was done to an adjoining property owner, the board was held liable for the injuries caused, on the grounds that the members of the board were guilty of misfeasance.[4] It was stated in this case that they would not have been liable for non-feasance, or failure to act.

Wrongful Quarantine

The three cases cited above are all decisions of the highest Court in Massachusetts, but the courts in other states have rendered similar opinions.

Thus, in an early decision in New York, the Court of Appeals granted a writ of habeas corpus for the release of prisoners who had been quarantined by the Commissioner of Health of the city of Brooklyn merely because they had been operating an express business in a section of the city where many cases of smallpox had occurred, and had refused to be vaccinated as ordered.[5] Since there was no evidence that they had smallpox or had even been exposed to the disease, the Court held that the action of the health officer was unwarranted, because he had not shown facts sufficient to justify this drastic procedure.

In a leading case decided in South Carolina in 1909, it was held that the action of a board of health in ordering the isolation of an elderly, refined white woman in a local pesthouse which had been used for Negroes suffering from smallpox was unreasonable.[6] The patient in this case was afflicted with anesthetic leprosy, which was considered virtually noncontagious. The Court issued an injunction against the action of the board, but held that the members were not personally liable for performing what they considered to be their duty.

Wrongful quarantine may prove expensive to a health official. In a more recent Kansas case, a health officer who took a smallpox patient from her home to a dirty cabin having no conveniences was held liable for damages amounting to about $3,000.[7] "A health officer," said the Court, "while required to obey his lawful orders and perform his official duty, is never excused for wanton conduct and inhumane treatment to patients suffering from serious illness, ..."

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A similar situation arose in Texas half a century ago, where the members of a board of health removed a boy suffering from smallpox and his mother from their home in cold, rainy weather and placed them in an unheated tent. Both died, and the members of the board were held to be personally liable for gross negligence, even though they were acting under a city ordinance.[8]

Collusion

If a board of health or a health officer is inspired by political reasons or expediency rather than by a true regard for the protection of the public health, his actions will be invalidated for damages.

Where, for example, a board of health ordered a ditch filled for the alleged reason that it was a nuisance because of odors, and it was shown in court that the ditch not only was not a nuisance but that the filling of it was brought about by influential persons who wanted better facilities for fishing purposes, the action of the board was held to be grossly irregular and improper.[9]

Another instance of collusion, with an ulterior motive, was one in which the secretary of a state board of health caused the outlet of waters from a lake to be obstructed so that a nuisance was created.[10] Since his order was due merely to a pretense, he was held liable for the damages caused.

Where a health officer ordered an old sewer blocked up, with consequent pollution of a water supply, which caused an epidemic of typhoid fever, this error in judgment resulted in an award of damages against the city.[11] A municipal corporation is never liable for the acts of its agents in performing governmental functions, but it is liable for the improper performance of its corporate or proprietary functions, such as the maintenance of streets, sewers, and the like.[12] A health officer is not liable for an honest mistake in judgment or for carrying on his duties in a reasonable and discretionary manner, but he will be liable for exceeding his authority or for injuries caused by arbitrary, imprudent, or malicious actions.

A state dairy commissioner who connived in the sale of impure milk to a local dealer was held guilty of wrongdoing in a Washington case in 1904.[13]

Personal Liability of Health Officers

In addition to the instances already cited, health officers have been held personally liable in a considerable number of other cases. If property is destroyed without just cause, as by unnecessary fumigation of a cargo of fruit[14]; the killing of horses supposed to be afflicted with glanders, but found actually to be free of the disease[15]; destruction of a steer erroneously thought to have anthrax[16]; or slaughter of healthy cattle[17]; the persons responsible for these tortious actions have been required to pay for their mistakes.

During the World War a zealous health officer in Michigan who was anxious to prevent the spread of venereal disease seized and examined an 18-year-old girl, who was found to be suffering from a gonococcus infection. He sent the girl to a hospital where a Wassermann test revealed that she also had syphilis. She was treated in the institution for twelve weeks and then ungratefully sued the health officer for damages. The Court awarded her a judgment against the health officer.[18]

The reason for this ruling was based on the fact that the health officer was not shown to have had reasonable grounds for believing that the girl was infected and hence acted in an arbitrary manner in seizing her and subjecting her to these personal examinations. The fact that subsequently she was found to have venereal disease did not excuse this lack of legitimate cause for the health officer's action under the existing statutes.

It has also been held in an Iowa case that a health officer cannot require a Wassermann test of an individual merely on suspicion[19], although there are a number of decisions to the contrary in other states, and this is not the general rule of law in such situations.[20] It has likewise been held in New York that a health officer cannot require a blood test of a dairyman in the absence of legislation authorizing such a test.[21]

Other Unreasonable Actions

When a health officer predicates his actions on economic reasons rather than on public health requirements, he steps beyond the bounds of his authority, as was illustrated in a very recent New Jersey case.[22]

Here the health department refused to grant a permit for the sale of milk merely on the grounds that there was already a sufficient supply of milk in the city. The Court dismissed this contention, holding that the action of the health department was arbitrary, capricious, and discriminatory, and that it was an illegal interference with the constitutional rights to engage in a legitimate business.

A similar decision was handed down in October, 1935, by a Federal District Court in Maryland, in which a regulation of the health commissioner prohibiting the sale or use of cream for the manufacture of ice cream in the city of Baltimore when the cream was produced from dairies more than fifty miles from the city, was ruled invalid and unreasonable, and an injunction against the enforcement of the regulation was granted.[23] It was pointed out by the Court that the health commissioner could accept certificates as to the sanitary quality of the cream from other local and state officials, could examine it on entry, and could prohibit the entry of any insanitary product, but that the police power could not properly be used as a barrier to the importation of foreign cream of good quality. This is a general rule of law, although there may be proper limits to the area of inspection.[24]

In a recent New Hampshire case it was held that a health department has no right to deny a license to sell milk to a non-resident whose products were admittedly clean and wholesome.[25] A board of health can not arbitrarily impose a limitation not authorized by statute, and refuse to permit the marketing of a product that complies with all sanitary requirements, especially since the sale of such a product is a matter of right.

Conclusions

From this brief review of a number of significant court decisions handed down by courts of last resort in this country between 1883 and 1935, certain important conclusions may be drawn. The official guardians of the public health have broad powers, but these powers are definitely circumscribed by the constitutional rights of the individual citizen. In performing their duties in behalf of the public welfare, health officers must recognize and observe the rights of individuals, and if they transgress them, "do so at their peril," as the courts have pointed out.

Despite the unfortunate tendency of many administrative officials in recent years to attempt the assumption of almost dictatorial powers over life and property, the American system of government is still founded on the sound democratic principle that it is one of laws and not of men. The courts, as a separate and distinct branch of our tripartite system of government, will continue to uphold the rights of individual citizens when they are infringed by the legislative or executive branches of the government. Health officials and other municipal officers would be wise to bear this undeniable fact in mind.

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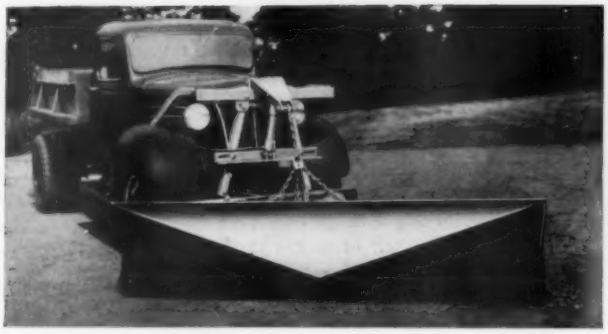
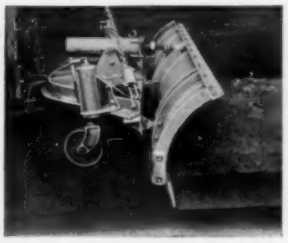
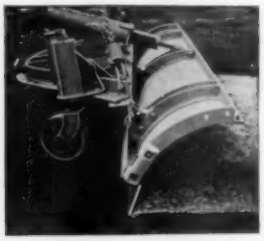




Edge of plow strikes 8-in. high obstruction.



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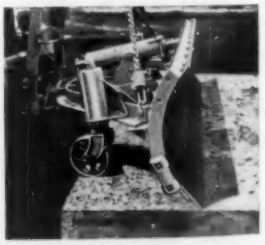

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Health officers who carry out their duties in a reasonable and prudent manner, dedicating their efforts to the common good, will always be upheld by the courts, but those few who act in an imperious, arbitrary, oppressive, or capricious manner, or depart too far from their authorized powers, are likely to find themselves in serious trouble with the judiciary. A restraining influence by the courts is, in fact, a highly salutary and beneficial feature of our democratic form of government.

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After Seven Years' Battling, Hominy Has a 600-Kw Electric Plant

By V. V. LONG
Consulting Engineer

IN October, 1930, the city of Hominy, Okla., started a seven-years fight for a municipal electric plant, carrying the $150,000 bond election 9 to 1. The fight had just started, for the utility company was able to delay construction of the plant until the spring of 1936. Even then, injunction in the Supreme Court of the District of Columbia prevented PWA from participation until this injunction was dissolved, in midsummer. However, construction was completed in April, 1937.

The equipment consists of three 300-hp Nordberg diesel engines direct-connected to 200-kw (0.80 power factor) Elliott generators excited by 7½-kw d-c generators driven by a Texrope from the main crankshaft. The engines are 10½ x 18-inch 6-cylinder, 4-cycle. The generators are 3-phase, 60-cycle, 2,400-volt. Fuel consumption for each unit on an 8-hour test, in pounds per boiler horsepower, was: at ½-load, 0.4415-pound; ¾-load, 0.408-pound; full load, 0.4115; 10 per cent overload, 0.417.

The fuel oil used is 29.5 gravity, heat content 19,200 Btu, delivered at a cost of 3.53 cents per gallon. The oil is pumped through a Gould Purifier, from the two 10,000-gallon storage tanks outside the building to a 300-gallon tank inside. Circulating pumps for cooling and spray water were furnished by Allis-Chalmers Manufacturing Co., and consist of three motor-driven closed-circuit units from hot well through cooling coils to storage tank and back through engine. Besides these, there are also three open-circuit pump units taking water from the base of the cooling tower through sprays. By this flexible system, the right amount of water can be circulated as required by the load at various periods of the day. The engine-cooling system is a 15,000-gallon elevated tank. Reasonably soft water is available, and all roof water is piped to the hot well. The cooling tower is of the Marley type.

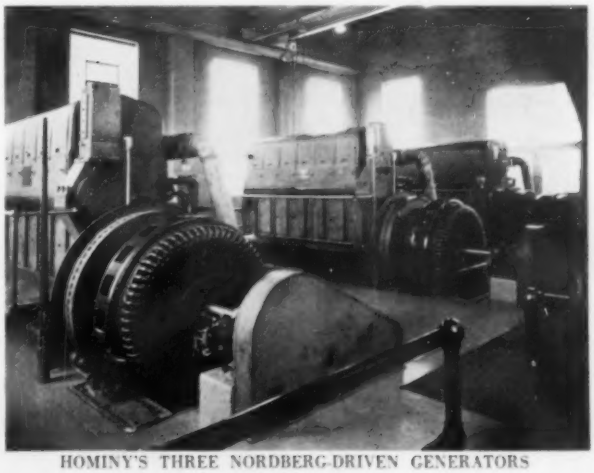
The Allis-Chalmers switchboard consists of three generator panels, one regulator panel, two double-circuit distribution panels, and one swinging bracket carrying two voltmeters, synchoscope and power-factor meter. On each panel are square-type indicating wattmeters and ammeters. On the regulator panel are a Brown Boveri voltage regulator and a Westinghouse 200-kw graphic wattmeter and static ground detector. Each panel can be disconnected from the main bus bars.

In a 6-foot wire enclosure around a concrete base outside the building are installed three 7½-kva service transformers and two series street-lighting transformers.

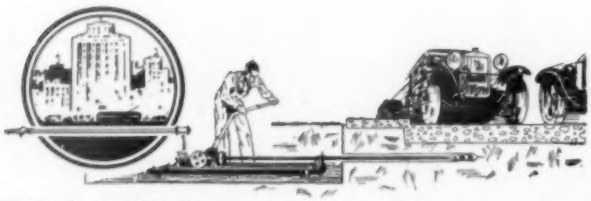
The municipal plant now has some 975 customers, or about 100 more than were taken over on June 20, 1936. The average load is 135 kw, with a low of 100 kw, and a Saturday-night peak of 320 kw. There are 15 miles of rural lines, and 10 more miles planned for.

The rates are as of June, 1936, or 8½ cents per kwh up to 12 kwh, and 3 cents thereafter.

The plant was designed by V. V. Long & Co. The Public Works Administration was represented by C. A. Marcus, Assistant Resident Engineer Inspector. Operation of the system is in charge of W. R. Brady, Manager of Utilities, and Frank E. Elsey, Electrical Superintendent.



HOMINY'S THREE NORDBERG-DRIVEN GENERATORS



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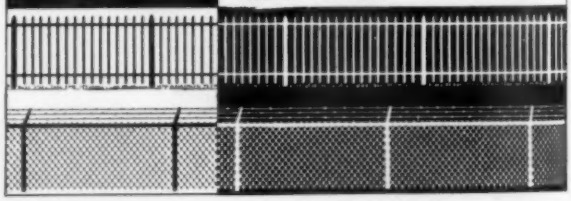

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The Flourishing Electric Plant of Ames, Iowa

Secrets of Its Success

By ROBERT W. ROOT

AFTER 40 years' operation of a municipal electric plant, the city tax rate of Ames (11,000 population) is one of the lowest in the state and is two-thirds what it was in 1920. In the last three years more than a quarter of a million dollars has been transferred from the system's surplus to other municipal funds. Net profits on 8,000,000 kwh amount to $8,000 per month, and range from 7 to 15 per cent of the total assets.

The original plant was built in 1897; in 1908 a proposal to sell it lost by 11 votes; in 1916 the entire debt of $16,000 was retired, and no money has been borrowed since. In 1916, a drastic rate reduction and mounting costs prevented profits in 1918 and 1919. Then P. F. Hopkins was appointed City Manager, and profit-making was resumed until, when present City Manager John H. Ames took charge in 1927, profits grew into six figures. In 1936 the net profit, after allowing 18 per cent of the gross income for depreciation, was $107,000. Diversions from surplus to March 1, 1936, totaled $430,500. Besides transfers for tax reduction, $41,000 has been turned to the retirement of bonds; $37,000 to construction of a storm sewer and addition to the disposal plant; and $6,500 for the purchase of a fire truck.

Taxes and Electric Rates

The city levy fell from 18 mills in 1920 to 8 in 1932, and then crept up to 11. When the World War was beginning, 39 cents of the Ames tax dollar went to city government. With electric profits allowing the city to cut its requirements in the next twenty years, this proportion fell; only 19 cents of every dollar that the Ames citizen pays today goes to support the municipal government.

At the same time, bonded indebtedness has been drastically reduced. In 1925 this stood at $210,000. In 1937 it is $75,000. In the four years since 1933, the per capita share of the bonded indebtedness has dropped from $17 to less than $7.

The most recent revision of the schedule, made about two years ago, brought the net residential charge per kilowatt-hour for the first 100 kwh or less used in one month down to 5.5 cents. In 1926 the Ames consumer paid $2.38 for 25 kwh; today, exactly a dollar less than that. For 50 kwh he pays $2.75 instead of $4.40 as in 1926. For 100 kwh he pays $5.50 instead of $8.46.

Upon installation of a single electrical heating unit of 2,000 watts or more capacity, all appliances except lights may be connected at a cooking rate, a net charge of 3 cents. There is a separate meter rate of 1.0 cents for electric water heating during off-peak periods.

The power rate schedule varies from 5 cents for 100 kwh or less to 1.25 cents for over 20,000 kwh. In Ames, however, power consumption cuts little figure. There are about 3,000 residential and domestic consumers to less than 10 large light and power buyers (the State College, located in Ames, has its own plant). There are ten residential consumers, moreover, for every small light and power buyer. Even service to farmers is negligible, since only about twenty farms use the utility. Another rate reduction is due soon.

Three Reasons for Success

"In the first place," Mr. Ames says, "the citizens have demanded that the plant be operated as a business proposition and not as a political toy. At any time during its history it would have been fatal for candidates for the City Council to run on a platform seeking to place this utility on a patronage or political basis."

Secondly, Mr. Ames says that the continuity of service of workers is responsible for much of the success. The present Chief Engineer, A. P. Ball, has served for almost a third of a century. A number of other employees have worked at the plant for more than twenty years.

In the third place, Mr. Ames believes the administrative policy of keeping the plant always at high efficiency has helped it to success.

In too many electric plants, both public and private, equipment is not kept in top-notch condition, he says. Failing to look ahead, many officials do not replace obsolete machinery. Thus they let the efficiency of their plants go down, their costs go up.

When Mr. Ames came to the head of the system, the plant was using 5 pounds of coal per kwh. During the next year this requirement rose to 6 pounds. With a new turbine and other plant improvements, coal consumption fell to 4 pounds; today it is less than 3½ pounds per kwh. Recently the city bought two new boilers, increasing both steam pressure and capacity of the plant. At present there are three General Electric turbines: 750 kw (1926); 2,000 kw (1929); 3,000 kw (1931).

Mr. Ames found that by shopping around he could also reduce expenditures for coal. Cost to produce a kilowatt-hour has dropped from 10 mills to 5 mills in the last 10 years.

What Makes the Profit

If privately owned utilities don't measure up to a good municipal utility, it is not in their technical but in their financial administration that they fail.

IDEAL ROTO SWEEPER

Cuts SWEEPING COSTS in Half

Hudson River Parkway

Every city, town and village can use one or more of these power sweepers to splendid advantage. Work equally well on concrete, wood, tile, brick or asphalt. Do a clean job of sweeping dust, sand, gravel, cinder, paper, etc.

Wherever there are large floor areas to be swept this power sweeper will save money.

It is truly amazing how quickly large areas can be swept absolutely clean with the Ideal Roto Sweeper. On any job where you would work from three to eight men with hand brushes or brooms, one of these power sweepers will save labor and do a better job in the bargain. With one or more of these power sweepers you can take care of all the sweeping jobs that are often neglected through lack of sufficient available labor.

Large cities will find this "one-man" power sweeper is a splendid auxiliary to their big tractor street sweepers, and for many other sweeping jobs around airports, public buildings, markets, docks, loading platforms, etc. Towns and villages can now have cleaner and better kept streets at a very minimum labor cost.

Ideal Roto Sweeper is made in two types—with straight brush and with angle brush. Write for catalog and prices.

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Mr. Ames refuted the argument that profits of municipal utilities merely represent the taxes they would get from a private plant. In Ames, he showed, the city gets the amount of this tax and its profit besides.

Free Service Equals Taxes

"It has been the policy of the city for many years to furnish free electric service to the various city departments. This seems a fair arrangement, inasmuch as the value of the 'free service' just about equals the amount of the city losses in taxes by virtue of the electric utility being municipally owned.

"Take 1936 for an example. Under state rules, the Ames utility would have a taxable value of $341,100. The local city and school taxes levied were 49 mills, which would return $16,700 on that value. The 'free service' furnished by the Electric Department amounted to an estimated $15,439. To this add $1,250—the estimated value of heating furnished to the water plant, the music pavilion and other city buildings—and we get a total of $16,689.

"Likewise, we should figure-in the discount of 15 per cent on electricity allowed the schools—about $350 a year. There are many other miscellaneous services each year, such as trucking and repair work, for which no charge is made. This would more than make up any difference between the electric service rendered and the tax loss."

Nor are profits made in Ames by fantastic bookkeeping. For many years it has been the policy to depreciate the physical property by 7½ per cent of the estimated total physical value of the property at the beginning of the fiscal year. This is deducted from the gross earnings to determine net income.

In 1932 Dean Anson Marston and Dean T. R. Agg of Iowa State College made a complete physical evaluation of the property and found a present fair value of $811,536 as of October 1.

"The normal ratio of investment to revenue value for utility plants in the United States is from 4 to 1, to 6 to 1. In Ames the ratio is 3.6 to 1."

To protect this utility against major expenditures at a period of depleted current revenues and to insure the safe operation of the utility with a much smaller current bank balance, a reserve account was recently instituted. The sinking-fund today amounts to $40,000. In addition, there is another reserve of $60,000 in unavailable bank balances which is being gradually released and transferred to the sinking-fund.

—From J. H. AMES, City Manager of Ames, Iowa: "Mr. Root has lived in Ames for a number of years and is familiar with our electric utility. His father was formerly a member of the City Council. I furnished Mr. Root with the statistical data used in the article, and it is correct."

Are You Merchandising Your Electricity?

If Not—Here's How

By E. E. SEGER
Commissioner, Public Utilities Commission, St. Thomas, Ontario

MANY municipalities do not merchandise; consequently, the consumer desirous of purchasing appliances is wholly dependent on the private dealers. In such non-merchandising municipalities the utility should adopt some definite policy whereby these dealers automatically accept their share of the common obligation of load building.

At first glance it might be assumed that since no merchandising department is maintained, there is little that can be done. This is hardly the case when we consider suggestions along the following lines:

1. Advertise!—Map out a carefully planned series of advertisements of an educational nature. These may deal with a variety of subjects ranging from the merits of electrical cooking, refrigeration, flat-rate water-heaters, right down to the details of the latest reduction in rates.

2. Remind your employees that they should set an example in the community by using electrical appliances 100 per cent. Every employee should serve as a salesman to a certain degree, especially in his own circle of friends, urging them to use electricity whenever possible.

3. Home Lighting Advisors might be retained throughout the year, devoting their time in off-season periods to the promotion of electric cooking, refrigeration, etc.

4. Sponsor public gatherings such as those which were held in many municipalities in connection with the Better Light Campaign.

5. Maintain intimate relations with your electrical dealers and exhibit friendly interest in their welfare.

In conclusion, may I suggest that there does seem to be a very definite obligation resting with each one of us in the matter of increasing the sale of power in our several communities. If we have not given the question serious thought in the past, then we should resolve to do so in the future.

That municipality which is content to erect poles, to string wire, read meters and collect bills, is hardly measuring up. Some municipalities may have become somewhat apathetic in their promotional endeavors, owing to a sense of security in the knowledge that they enjoy a monopoly in their field and that any new business will automatically fall right into their lap. This attitude is, of course, absurd. It is my contention that, owing to the very fact that we do hold a monopoly in the sale of current, we are definitely obligated to offer a quality of service even superior to that which might suffice under ordinary competitive conditions.

—Excerpt from a paper before the Ontario Municipal Electric Association at Toronto.

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To meet the long-felt need for a more flexible smaller size dirt-moving combination . . . with lower original investment and lower operating cost . . . Allis-Chalmers presents the new 4-yard Continental Scraper, powered by the A-C Model "K" tractor. This new Junior scraper is of the same high quality construction and design as the well-known 5, 7 and 10-yd. models; is especially adapted for the higher speeds and more effective power of the husky "K." The toughest materials are loaded to full scraper capacity . . . hauled to the dump and spotted . . . faster . . . at lower cost than is possible with any other scraper and tractor combination in this class. Both tractor and scraper have excess weight eliminated. This means Extra payload is hauled instead of extra dead weight. It means more of the "K's" power is used for loading . . . and for maximum performance in higher speeds—speeds at which 90 per cent of your tractor work is done. The result is "Cheaper-Per-Yard" performance. Write for catalog or ask the Allis-Chalmers dealer.

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ALLIS-CHALMERS MANUFACTURING CO.
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TRACTOR DIVISION—MILWAUKEE, U. S. A.

Maintenance Painting at Sewage-Treatment Plants

Types of Paint for Above and Below Water Surface

SEVERE corrosive conditions in sewage-treatment plants have made the problem of painting a matter of particular importance. Investigations have been carried on by engineers and paint manufacturers on many sewage-disposal projects, and valuable data have been accumulated.

For practical purposes, any study of the use of paint in sewage plants should be divided into two classes—above water and below, particularly since separate types of paint systems are involved. No single paint or system of paints has yet been evolved that will give acceptable service in both of these capacities.

With regard to submerged surface painting, one of the chief enemies of paint is the sticky emulsion of oil and grease coming from the flowing sewage. Almost all paints are affected by this tenacious substance. As a protective primer for steel equipment used under sewage, rust-inhibitive pigments and black oxide of iron have been found very effective, with a tung-oil synthetic resin varnish, plus a small amount of heavy kettle-bodied linseed oil as the vehicle. Zinc chromate has been found one of the most effective inhibitors. Hot bituminous coatings have also been found effective and the asphalt emulsions applied in a thick film have proved satisfactory.

The effectiveness of such paint coatings is largely dependent upon their ability to prevent corrosion. The paints suggested above, with their high degree of moisture-resistance and rust-inhibiting properties, will give reasonably satisfactory service.

Clean Before Painting

Both below and above the water line it is essential to thoroughly clean all metal surfaces prior to painting. The film of oil and grease should be removed by the use of suitable detergents such as trisodium-phosphate or strong caustic soap solutions, followed by a thorough hosing-down with clear water. Steel scratch brushes, chip hammers and scrapers should be employed to dislodge loosely adhering old paint, and to clean out rust pits down to the metal. This is important because even apparently dry rust on metal retains from 20 to 25 per cent adsorbed moisture, and unless this rust is removed, it will continue to promote further corrosion beneath any paint film applied over it. Without a thorough cleaning job, the effectiveness of high-quality paint coatings is wasted.

It has been found that brush application of priming coats has a tendency to improve adhesion, since this method is more likely to assure penetration into all pits and irregularities. Top coats may be applied by brushing or spraying, whichever is more economical.

Above the water line, the problem of painting differs in that the destructive agents in this case are chiefly corrosive gases such as hydrogen sulphide, chlorine and numerous destructive volatile organic substances. These gases, in the presence of moisture-laden air, require a paint system that is highly impervious, in order to prevent their attack on the metal, and the paint coating itself must be relatively unaffected by this chemical attack. A survey of plants in all parts of the United States shows a consensus favoring a system of paint which includes a rust-inhibitive base coat and two coats of aluminum paint, as the most satisfactory method of meeting this condition.

A number of special primers have been developed for this service. While the pigments are inhibitive in character, there is a tendency to avoid the use of lead pigments because of their affinity for hydrogen sulphide and other sulphur compounds. The vehicle portion most often consists of chemically resistant synthetic resin varnish.

The aluminum paints selected for this work commonly make use of the same class of varnishes or vehicles for the aluminum pigment. This combination of a pigmented primer and aluminum top coats is similar to that used on highway bridges and other steel structures, except that the vehicle employed is of a more specialized character. The value of the use of synthetic resins in the formulation of the varnish is based on the facts that:

a. Synthetic resins impart high alkali resistance. Alkaline substances saponify the oils in ordinary linseed-oil paints and form water-soluble soaps, which results in disintegration of the paint film.

b. The acid-resistance of these synthetic resin varnishes is much superior, many of them being unaffected by any concentration of the acids normally present in sewage works atmospheres.

c. These vehicles resist the oxidation which ultimately destroys the paint film; consequently they remain flexible over a much longer period.

d. Tests have proved that synthetic resin varnish films are especially resistant to the penetration of moisture and gases, increasing the protection they offer to a metal surface.

When these vehicles are mixed with aluminum paste pigment, the minute flakes arrange themselves in parallel layers throughout the paint film, seven to nine deep. This arrangement serves to reinforce the varnish film by impeding the penetration of gases and making them seek a much longer path. They also protect the varnish against destructive action of sunlight and permit eventual failure to occur only by slow weathering-away of successive layers of the film. Aluminum metal, of which the flakes are composed, is notably unaffected by the chemicals present in these corrosive atmospheres.

Aside from the service characteristics, the factor of appearance has been one reason for the choice of aluminum paint for sewage-disposal plant superstructure. The silver gray of aluminum paint does not discolor easily and maintains an attractive appearance even after long weathering. A single coating will completely cover underlying coats but for severe service such as is found in plants like this, at least two coats are usually employed.

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Forward Steps

Reported by
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Des Moines Profits from Long-Time Planning

THE RIVER-FRONT, DES MOINES, IOWA
Left foreground, City Hall; left background, Capitol Building; center, Federal Building; right, Municipal Court Building

DES MOINES, IOWA.—Cities with rivers running through the heart of their residential and business districts should appreciate the story of half a century of work by Des Moines in beautifying and bridging her rivers. Long-time planning has proved its worth to this city, with the permanent results that have been obtained through Federal aid during the emergency relief period.

The city was originally located at the fork of the Des Moines and Raccoon Rivers. From this center it grew in all directions. Almost from the very beginning, the problem of beautifying the river was uppermost in the minds of the pioneers and they began to make definite plans. Long years of litigation finally put the river-bank in the business district under control of the city, and some progress began to be made. The Commercial Exchange, which is now the Chamber of Commerce, was organized in 1888, with one of its chief objectives the improvement of the river-front and the solving of the bridge problem.

Step by step dreams of a civic center, which took definite form between 1890 and 1900, began to come true. The City Library, Post Office, Coliseum, City Hall, Municipal Court Building, Federal Court Building, and recently, with PWA help, the Legion Memorial Armory, were built along the river-front. During all these years definite plans were in mind to confine the river within concrete walls and to maintain a rather uniform level with a dam below the fork of the rivers. The City Engineer's office had been preparing plans year after year, keeping them up to date and always ready for use.

In 1933 the CWA appeared with an offer to put a large number of men to work on Federal payroll. From the Engineer's office came the plans for the

AS DES MOINES MAY LOOK WHEN THE RIVER-FRONT IMPROVEMENTS ARE COMPLETED
As visualized in a large drawing being made as a Federal Artists' Project

EVEN IN FAR-OFF AFRICA—

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ECONOMICAL . . . enduring . . . easy to handle—these are the three outstanding advantages of Trinidasco cold-laid paving mixtures—a recent development in modern asphalt paving construction.

Cold-laid mixtures made by the Trinidasco process utilize Trinidad Lake Asphalt, which is dispersed in a pulverized form in a mixture of mineral aggregate and a specially prepared fluxing agent. The unique characteristics of Trinidad Lake Asphalt used in the construction of hot-mix pavements since 1876—ductility, adhesiveness, cohesiveness and an inherent colloidal mineral filler—give Trinidasco cold-laid mixtures qualities that will withstand heavy traffic under all climatic conditions.

Trinidasco mixtures have other advantages too. They are "traffic safe" . . . mixed cold . . . laid as easily as hot mixtures . . . can be hauled long distances and used at once or several days after being prepared . . . do not "set up" until subjected to the pressure of rolling.

That's why all roads lead to economy when they're paved with Trinidasco. Highway engineers and others charged with the responsibility of constructing durable, economical roads should have all the facts about Trinidasco.

Mail the coupon below today. It will bring you our 24-page illustrated booklet FREE. There are other Barber Genasco Products for constructing and maintaining highways. Check the items in which you are interested, and this information will be sent to you.

TRINIDASCO

MADE WITH NATURE'S OWN

TRINIDAD LAKE ASPHALT

THE BARBER COMPANY, Inc., Dept. A-10, 1600 Arch Street, Philadelphia, Pa.
Please send me complete information about Trinidasco as well as the Barber Products checked below.

- ☐ **TRINIDAD LAKE ASPHALT** — For hot mix sheet asphalt and asphaltic concrete pavements.
- ☐ **BARBER EMULSIFIED ASPHALTS** — Used cold for penetration, pre-mix, road mix (mixed in place) and surface treatment work.
- ☐ **BARBER BRAND LIQUID ASPHALTS** — For cold surface treatment—for hot surface treatment.
- ☐ **BARBER BRAND WINTER COLD PATCH** — A cut-back asphalt for use in patching and maintenance work in cold weather.
- ☐ **GENASCO CRACK FILLER** — For maintenance of concrete roads.
- ☐ **GENASCO BLOCK AND JOINT FILLER** — For brick and granite block streets.
- ☐ **CURCRETE** — An asphalt emulsion for curing concrete highways.

river improvements. Now walls have been built on both sides of the river from Grand Avenue to the fork of the rivers, a distance of about half a mile. On top of these walls are attractive balustrades. On each side of the river at the water level is a concrete box sewer, with the top serving as a promenade. The sewer box is a part of the intercepting sewer which carries all the sanitary sewers from the city through an outfall sewer to a point near the edge of the city where a sewage-disposal plant will be built as soon as the system is complete.

In the fork of the rivers, which was formerly a marsh, more recently the city dump, a playground park is being built. The concrete walls which hold the rivers within their banks will serve as retaining walls for the fill, which is now practically complete.

A dam below the fork of the rivers is nearly finished. This dam serves a two-fold purpose: it will maintain a uniform water level along the civic front, and, more important, it will impound the waters of both the Des Moines and Raccoon Rivers and make them available for the water-works system. Des Moines uses a galley system with tile laid in the sands of the Racoon Valley. In extremely dry weather it is necessary to pump water from the rivers on top of the sand, where it filters through to the galleys. There will now be available not only water from the Raccoon River but also from the Des Moines River.

Traffic Relief

On top of the dam will be a bridge. Another bridge will cross the Raccoon River nearby, tying-in sections of Des Moines which formerly were miles apart. This work has continued constantly under CWA, FERA and WPA, and has been held the number one project of the city. But these two river improvements are only a part of the city's bridge program. Two rivers through the very center of the business and residential district have necessarily bothered Des Moines with traffic problems for many years. Therefore, when funds were made available to the Highway Commission, long-time plans were again brought forward. Six new bridges and viaducts have resulted from Federal and state funds. Three of these are complete and in use, and three others are in the course of construction.

Des Moines has always believed in planning. The Town Planning Commission, the City Engineer's office, the Federation of Women's Clubs, the Chamber of Commerce, and many other organizations in the city, have taken a prominent part in the last half-century of planning for the city. Probably as long as Federal aid is available, Des Moines will have plenty of projects ready. In the City Engineer's office and the Town Planning Commission's office are plans on paper that will take many years to fulfill, but Des Moines has certainly proved to its own satisfaction that planning ahead has its advantages.

JOHN D. ADAMS,
Secretary, Des Moines Chamber of Commerce.

The Going Is Good in Goshen

GOSHEN, IND.—This city, with a population of 10,397, is fortunate in owning its municipal electric plant, and enjoys residential rates as low as 1¼ cent per kwh. Goshen's water supply, also municipally owned, furnishes pure, untreated water, below 55 degrees throughout the year. Over 8 miles of trunk-line sewers, up to 5 feet in diameter, drain Goshen's streets and carry its waste to a modern sewage-treatment plant. This improvement was made through a 30 per cent PWA grant. During the recent depression years, Goshen made permanent improvements totaling over $3,000,000 through the aid of these Federal funds. All the improvements have been made without cost to the citizens of Goshen, except the sewers and treatment plant, which costs an average of 80 cents per family per month. The civil city has no bonded indebtedness, and in proportion to its assessed valuation has one of the lowest tax rates in the state.

It was hard to believe that the business district was so poorly lighted, until all old street-lighting equipment was removed from the business district and a new low-voltage multiple system was installed. Goshen now has ten two-light 1,500-watt posts in each block. The boulevard lighting system along Highways 2 and 15 was rebuilt and new cable installed as well as modern glassware. These improvements were made through a "45 per cent grant only" Federal loan at a cost of over $50,000. The bonds issued to cover this project are being repaid entirely from the profits of the Electric Department.

Rebuilding the boulevard lighting system was decided on after the State Highway Department's decision to construct a new pavement over Routes 2 and 15. This pavement varies in width from 40 feet in the residential district to 64 feet in the business district, is 2.8 miles in length, and runs the entire width of the city. The entire cost, nearly $200,000, was borne by the Highway Department. Goshen's 64-foot pavement is the only improvement of this extreme width made by the Department.

Goshen's diesel electric generating plant, installed in 1931 at a cost of over $300,000, includes three 900-hp Fairbanks-Morse engines. Energy costs as low as ¾-cent per kwh at the switchboard, before depreciation. The Municipal Electric Department now serves more than 80 per cent of the residential consumers. Owing to rapidly increasing load, the administration let a contract in July for a 1,000-kw F-M diesel unit. Residential rates are as follows:

Per Kwh		*Kwh Per Month*
$0.065	for first	30
.045	for next	30
.020	for next	60
.0125	for next	400
.02	for all over	600

Minimum payment, $1.

Rates charged the municipality for street lights are as follows:

CP		*Per Year*
60	Plain hood and bracket	$16.13
60	Plain hood and center suspension	17.81
100	Plain hood and bracket	18.94
100	Plain hood and center suspension	20.44
100	Junior ornamental post	24.75
250	Plain hood and bracket	29.63
250	Plain hood and center suspension	31.31
250	Junior ornamental iron post	35.62
250	Senior ornamental iron post	38.44
400	Plain hood and center suspension	44.25
400	Junior ornamental iron post	48.38
400	Senior ornamental iron post	51.19
600	Plain hood and center suspension	51.94
600	Senior ornamental iron post	59.06
980	Senior ornamental iron post	81.33
1,455	Senior ornamental iron post	120.65

CLELL E. FIRESTONE,
Mayor.

Demolition Aids Safe and Sanitary Housing in Memphis

MEMPHIS, TENN.—Unsafe and insanitary buildings, ranging from Negro tenements to an old Civil War prison, are toppling in Memphis, as the result of a demolition campaign waged by the Publice Service Department of the city government.

Since January 1, 1937, Building Bureau inspectors have kept an intensive watch for decayed structures during their routine inspection tours and have made special trips of investigation in run-down areas of the city. Their findings have been presented to the City Commission by the Commissioner of Public Service; condemning at least ten buildings has become a part of each weekly Commission meeting.

Up to September 13, 350 buildings had been demolished in Memphis this year, including 162 condemned and 188 whose owners cooperated by going ahead with demolition without legal condemnation. No cases, however, have been taken into court. Memphis is in the midst of an unusual building boom and is, on the whole, alert to the advantages of clearing the ground for progress, though patience and persistence are necessary in many instances. Often, for example, Negroes are found living in shacks rent-free and must be given time to find other quarters. The poorer class of white tenants is another problem, for which the better-housing movement, also active in Memphis, must find a solution.

Besides buildings already demolished, there are 117 condemned and awaiting demolition; 637 others have been modified and repaired through the city's efforts, and sheds where people had been living under miserable conditions were moved to the back of their lots to serve as outbuildings instead of dwellings.

After inspection of a building, owners are given notice to repair or demolish the building within 20 days, after which, if no action has been taken, legal condemnation by the City Commission follows. When owners cannot be located, the city building code provides that the city may demolish the buildings and charge the expense, if any, against the owner or person in possession. The procedure used is to get three bids, at least, from contractors who will pay for

$1^{00} = $2^{75} = $412^{50} = $575^{00}

(or)

Pavement Maintenance Costs

at RICHMOND, VA.

East Main St., Richmond, is brick paved for 40 blocks through the heart of the city.

MAINTENANCE EXPENSE OF THE PRINCIPAL TYPES OF STREET PAVEMENTS, RICHMOND, VIRGINIA

From the Annual Report of the Director of Public Works for the Year 1936

Type	Total Sq. Yds.	Sq. Yds. Replaced	Total Cost	Unit Cost per Sq. Yd. for all Maintenance	Comparative Index
Vitrified Brick	282,726	16	$23.47	$0.00008*	1.00
Pavement Type A	297,696	36	65.34	0.00022	2.75
Pavement Type B	1,237,256	33,487	40,505.67	0.033	412.50
Pavement Type C	180,984	3,951	8,383.54	0.046	575.00

*"Maintenance due to causes other than the failure of the Vitrified Brick."

● Of course, you've always known that of all the pavement types, brick is far less expensive to maintain. But how those official figures for Richmond, Va., give point and definite form to an old truth!

Brick maintenance for 1/575th of the maintenance cost of another well-known type is quite a lot of difference!

So. 23rd Street was brick paved last year.

Brick pavements are now in daily use after nearly 50 years of exposure to weather and traffic. With such a long life and such a low maintenance, brick is indeed the greatest of all paving values!

The reason for long life and low cost of brick pavement is due to the fact that it withstands weather as well as traffic. Changes in temperature and atmospheric moisture damage most pavements. Brick is more highly resistant to these natural causes of damage than any other type. In addition it is highly resistant to traffic damage.

Use vitrified brick on new jobs. Various types of old pavement may be easily resurfaced with brick. National Paving Brick Association (Affiliated with Structural Clay Products Institute), National Press Building, Washington, D. C.

BRICK

FOR NEW AND RESURFACE JOBS

EXHIBITOR: HIGHWAY EXHIBIT, AMERICAN ROAD BUILDERS' ASSOCIATION, JANUARY 17-21, CLEVELAND, OHIO

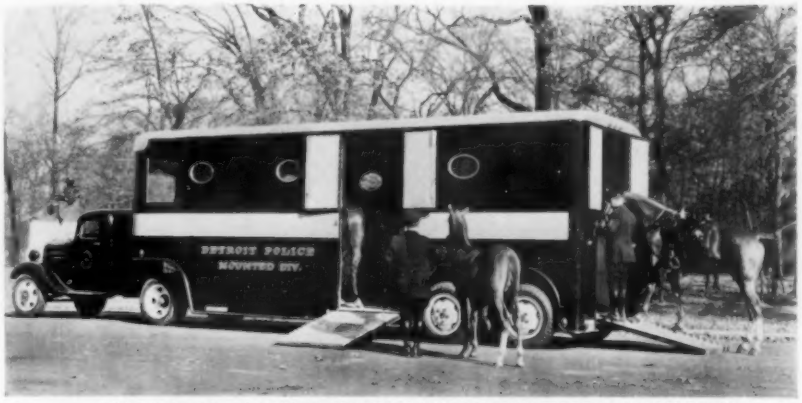
Why not remember to mention THE AMERICAN CITY?

the salvage materials or do the work for them in case of very poor property.

The effect on tax revenues is slight. The buildings demolished had little value and in many cases have been replaced by modern structures assessed at higher values. In the future, the land thus cleared will doubtless bear developments which will increase the tax revenues.

In the meantime, scores of old eyesores have been removed, and room has been made for new structures which will be governed by better regulation than in the past. The demolition campaign is the other side of the better-housing shield and works hand in hand with the latter's objectives.

RALPH PICARD,
Commissioner, Department of Public Service.



NINE HORSES AND THEIR RIDERS CAN BE TRANSPORTED IN THIS VAN

A Trailer for Police Horses

DETROIT, MICH.—We have used several types of horse vans in recent years, finding the main difficulty in the converted type trailer in the grading of the ramp which made loading and unloading difficult, and the fact that unless a cab was specially modeled, there was not room for enough horses to compensate for the trouble.

A year ago we made a special offer to convert a semi-trailer into a rather up-to-date horse van which accommodates nine horses with their riders, and is powered so that this equipment can be transported to any part of the city inside of an hour. Detroit has had its share of strike troubles in recent months and for controlling crowds there is no protective service better than the mounted man. We have had comparatively little difficulty here, but it is always true that a large crowd acts more or less as a mob, and the presence of a few horses, competently handled, usually results in full control of mass movement.

The van has a door on each side and at the rear, accommodating three horses in each opening. The ramp itself folds up and completes the door. It is absolutely essential in moving this type of equipment that it be motorized. To attempt to march such a complement of horses for, say, a distance of ten miles would require a much greater period of time, and time which could not be afforded.

HEINRICH A. PICKERT,
Commissioner, Police Department.

A Memorial Music Pavilion

MANCHESTER, IOWA.—August was a great month for the music lovers in the little city of Manchester, for on the 8th, with the aid of the Delaware County Public School Bands, citizens and city officials formally dedicated a new $14,850 band-shell in lovely, wooded Tirrell Park.

The music pavilion was the gift of the late Senator and Mrs. R. W. Tirrell, who gave the land for the park and funds for a permanent memorial. No more fitting or more permanent memorial could be built, the park officials decided, than a reinforced concrete band-shell which could be used for open-air concerts, pageants, dramas and public assemblies. To design a structure of beauty and dignity, the City Park Commission, under the direction of its President, chose Norman Hatton, Cedar Rapids architect.

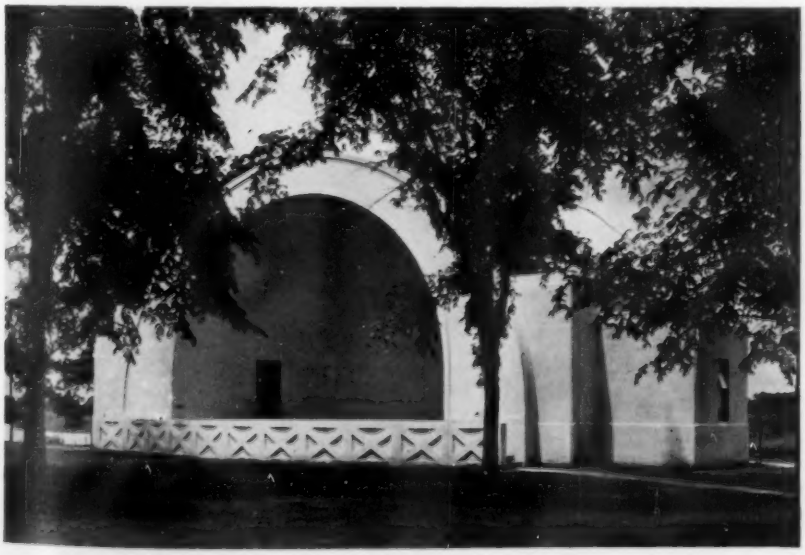
In design the band-shell is a modern, white, smooth-formed building whose central motif is a round arch 32 feet high. This arch spans a stage 38 feet wide, and deep enough to comfortably seat a 65-piece orchestra. The shelter over the stage is a section of a spherical dome which acts as a huge sounding-board, a great aid to outdoor acoustics. Behind the rim of the arch are hundreds of colored lights which reflect on the curved ceiling of the shell and cast a soft glow on the performers. Footlights behind the decorated concrete rail are of the portable type.

Steel doors on either side of the stage lead to spacious dressing rooms located in the ends of the 84-foot length of the building. In the basement are toilet facilities for men and for women. Future plans for the structure include a curtain just behind the arch which will make the stage even more suitable for dramatic and pageant work.

Although the contractors, E. B. Castle & Son, of Marion, used some 20,000 feet of lumber in forming the concrete work, not one stick of wood remains in the building. The entire shell and accompanying room structure is architectural reinforced concrete, the type of construction employed on the West Coast to resist earthquake damage. The Manchester band-shell, the designers claim, can withstand any amount of vibration without distortion or damage.

In building the pavilion, 370 cubic yards of concrete was cast into forms in which 17 tons of reinforcing steel was arranged. The surface of the forms was plywood, which gives a smooth, jointless surface to the plain walls and curving shell. Certain portions of the surface were rubbed after the forms were removed, and the whole building was given a finish of white cement paint. This paint, an ingredient of which is portland cement, is a permanent finish. The detail on the front railing, which comprises a series of intersecting diagonal bands, was formed in concrete by means of wood molds.

MRS. A. W. STEARNS,
President, City Park Commission.



MUSIC PAVILION IN TIRRELL PARK, MANCHESTER, IOWA

"—the salesman for any industry to the municipality."

Office of City Engineer
CITY HALL
New Castle, Indiana

Mr. Edgar J. Buttenheim,
President & Manager,
The American City Magazine,
470 Fourth Avenue,
New York City, New York

Dear Mr. Buttenheim:

Received your Municipal Index, of which I am mighty proud, as well as the entire office force.

The Municipal Index is the best guide in our office, for there is hardly a thing to be purchased for the city of New Castle, that the purchasing department, if not acquainted with the firm handling the article, does not refer to The Municipal Index and run through it for a possible clew.

It seems to be the best method of condensing the various catalogs of manufacturers that makes it so convenient to contact the right firm, and I surely wish you success in a more complete and larger edition next year.

To me, it is the salesman for any industry to the municipality.

Yours very truly,

Ernest L. Guyer.

Ernest L. Guyer,
City Engineer

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Why not remember to mention THE AMERICAN CITY?

House Trailer and Tourist Court Regulations

THE City Commission of San Antonio, Texas, has recently adopted an ordinance regulating automobile tourist courts, as well as combined courts which cater to house trailers. Among other provisions, the ordinance stipulates that:

No person shall park, place or locate any house car being used for human habitation upon any street or plaza in the city of San Antonio for a longer period than three hours.

Each site used as an automobile tourist court or a combined automobile tourist court and tourist court shall be provided with an ample and adequate supply of water of safe, sanitary quality, approved by the Board of Health.

Each such court shall be provided with safe and adequate provision for the collection and removal of waste and garbage, approved by the Board of Health and complying with all sanitary and other ordinances of the city; and shall be provided with a proper and acceptable sewer system, either by connection to the city sewer system where such is available, or to a private sewage-disposal plant, all of which shall comply fully with the plumbing and other ordinances of the city, and regulations prescribed by the Board of Health.

Each unit reserved for the accommodation of any house car shall be not less than 25 by 35 feet in area, and shall be clearly defined by proper markers at each corner. The site shall be level, free from rocks and weeds, and well drained.

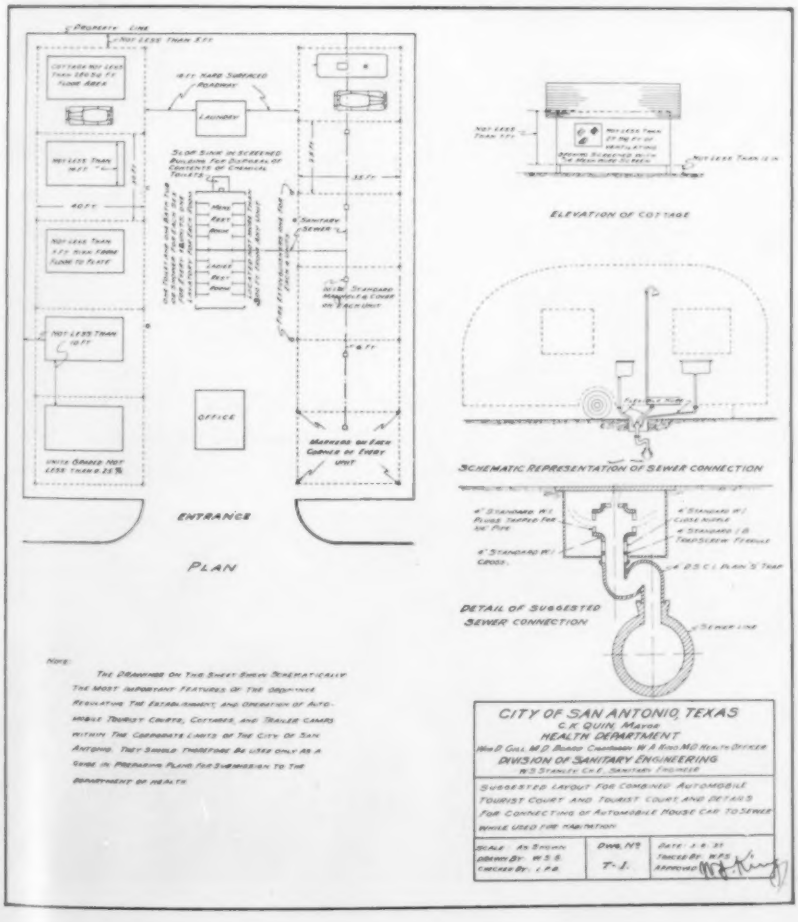
No house car shall be located on any site where there is less than 10 feet between the house car and other cottages, buildings and other house cars included in the court.

There shall be one toilet for each sex for every twelve units or fraction thereof, and the same number of shower baths or bathtubs. All toilets, basins, showers and bathtubs shall be placed in properly constructed buildings located not more than 300 feet from each cottage or house car site.

The Board of Health shall cause each and every court to be thoroughly inspected at least four times each year.

It shall be unlawful for more than one family to use a cottage or house car as living or sleeping quarters.

(This ordinance is printed in full in *Texas Municipalities*, July, 1937. Apply to the League of Texas Municipalities, 2220 Guadalupe St., Austin, Texas.)


PLAN
ENTRANCE
ELEVATION OF COTTAGE
SCHEMATIC REPRESENTATION OF SEWER CONNECTION
DETAIL OF SUGGESTED SEWER CONNECTION
CITY OF SAN ANTONIO, TEXAS
C. K. QUIN, Mayor
HEALTH DEPARTMENT
DIVISION OF SANITARY ENGINEERING
SUGGESTED LAYOUT FOR COMBINED AUTOMOBILE TOURIST COURT AND TOURIST COURT AND DETAILS FOR CONNECTING OF AUTOMOBILE HOUSE CAR TO SEWER WHILE USED FOR HABITATION.

Municipal Debt Adjustment Act

AN amendment to the Bankruptcy Act adopted by the recent session of Congress and approved by the President August 16, provides legislation to take the place of the Act of 1934, recently held unconstitutional by the Supreme Court.

The new Act provides procedure by which the indebtedness of insolvent taxing agencies, such as local drainage, levee, irrigation, reclamation, road, and sewer districts, as well as towns, boroughs and municipalities, may effect compositions with their creditors. These compositions would be approvable only when the districts or agencies filed voluntary proceedings in bankruptcy accompanied by plans approved by 51 per cent of all the creditors of the district or town. The plan of composition could not be confirmed unless accepted in writing by creditors holding at least 66 2/3 per cent of the aggregate amount of the indebtedness of the petitioning district or taxing agency, unless the judge was satisfied that the taxing district was authorized by law to carry out the plan, and there had been a finding by the court that the plan was fair, equitable and for the best interest of the creditors. The jurisdiction conferred by the Act terminates June 30, 1940.

—From *The New York Times* for August 22, 1937.

Books for the City Hall Library

UNDER the title, "A 30-Section Bookshelf for the City Hall," the 1937 edition of THE MUNICIPAL INDEX presents a selected list of the latest and best books on a wide variety of subjects of interest to readers of THE AMERICAN CITY. This bibliography is classified under the following headings:

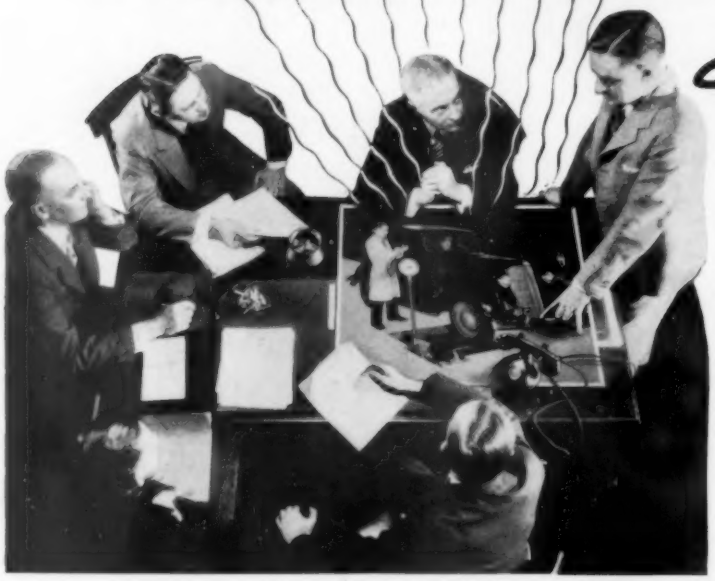
1. Airports and Aviation
2. City and Regional Planning and Zoning
3. City Manager Plan
4. Civil Service
5. County Government
6. Elections
7. Finance and Taxation
8. Fire Prevention and Control
9. Governmental Research
10. Health and Sanitation
11. Home Rule
12. Housing
13. Liability
14. Metropolitan Areas and City-County Consolidation
15. Municipal Government and Administration (General References)
16. Outdoor Lighting
17. Parks, Playgrounds and Swimming Pools
18. Pensions and Retirement Systems
19. Police
20. Public Utilities
21. Purchasing
22. Refuse Collection and Disposal
23. Reporting
24. Schools
25. Sewage and Sewage Treatment
26. Street Paving and Maintenance
27. Traffic Control and Facilitation
28. Trees and Forestry
29. Unemployment Problem and Relief
30. Water Supply and Purification

For the various books listed brief descriptions are given, together with author's and publisher's names, number of pages, year of publication, and price.

Copies of the bibliography are available free upon application to THE AMERICAN CITY.

We are indebted to a number of special organizations for their recommendations of suitable works in their respective fields. In some cases books have been omitted which should be included in a more extended bibliography. THE AMERICAN CITY will furnish additional reading lists to anyone interested.

The "hot" subject in a thousand cities today is *Traffic Safety!*



MIAMI, SEATTLE, PORTLAND, BILLINGS, KNOXVILLE, *enjoy Bendix testing efficiency!*

BENDIX IS PLEDGED TO SAFETY

LEFT: *Tests each brake separately—by full wheel revolution under electric power . . . shows total stopping ability . . . shows up "out-of-round" drums. TESTS TRACTOR AND TRAILER TRAINS accurately.*

RIGHT: *Tests wheel alignment, caster, camber, toe-in, entire steering geometry, precisely and quickly. Shows exactly work needed. Nothing left to guesswork.*

PROPERLY handled, municipal car-testing cuts down street accidents swiftly and sharply. Bendix, pioneer sponsor of "Street Safety by Prevention", has painstakingly developed and manufactures the machinery to do this work. Most motor car factories use it for final new-car tests. It is positively and consistently accurate. It is very fast. It is simple. It is very sturdy. It is very reasonable in price. Very little training is needed to use it expertly. It is called Bendix Civic Safety Clinic Equipment.

This machinery enables a small staff of men to test a car a minute on each Safety Line. It tests brakes, steering, headlights, wheel alignment and as much in addition as you care to check. Send for complete information TODAY!

BENDIX PRODUCTS CORPORATION

(Subsidiary of Bendix Aviation Corporation)

450 Bendix Drive • South Bend, Indiana

BENDIX

CIVIC SAFETY CLINIC *Equipment*

Traffic Control and Facilitation

Conducted by Publications Committee, Institute of Traffic Engineers, 1 Park Ave., New York
Paul L. Green, Chairman; John T. Gibala, Vice-Chairman; William C. Brandes, Otto K. Jelinik, Burton W. Marsh, William R. McConochie, E. J. McIlraith, Donald M. McNeil, D. Grant Mickle, Robert A. Mitchell, P. Taylor, Reyburn Hoffmann

Traffic Signs and Signals?— Or Advertising Signs?

By REYBURN HOFFMANN
Secretary-Manager, St. Louis Safety Council

ACCEPTING as good American business enterprise the animated illumination displays, which run the gamut from a lonely wink-a-light socket button operating a single red bulb on Bess's Barbecue Bungalow to those engineering marvels which enact the final close-up of "Hell's Wings" atop the marquee of Main Street's Picture Palace, the problem of keeping the traffic signs and signals visible and at highest efficiency at the present time appears to land right in the lap of the man who installs and maintains the traffic signals and signs. It is up to him to meet conditions and reduce the competition between his signs and signals and their backgrounds. Many situations can be cleared up by voluntary consent.

Examination of an accident intersection disclosed that in the windows of a drug-store on the southwest corner were two of the old-fashioned red and green liquid globes with lights behind. It so happened that the green globe was always visible to south-bound drivers, and of much better color and brilliancy than the old-fashioned traffic-signal light. So, regardless of the indication of the signal, the drug-store light always said "Go" because it was the green one. The red drug-store light was on the cross street frontage and away from the corner, and not visible from the north approach. To have asked the druggist to give up his symbolic globes would have been futile, but he had no objection to switching the colors.

Another instance of ready cooperation was the readjustment of a floodlight on a filling station lot, whose glare caused drivers to disregard a stop sign. The Traffic Division of the Department of Streets and Sewers has eliminated many conflicting conditions by enlisting the ready cooperation of the owners.

While authorities agree that color blindness is not, in itself, a serious handicap, because "the driver can learn the positions of the lenses in the signal head," nevertheless his handicap is aggravated when the background of a signal is a riot of street lights, electric signs, and perhaps some approaching headlights under certain conditions of grades and curvature.

To further emphasize the importance of driver vision in this problem, let me quote from a paper published in the *Journal* of the Missouri State Medical Association last year, entitled "Vision and Safe Driving," by Dr. R. E. Mason, opthalmologist, of St. Louis:

"The first test conducted was for visual acuity. It was made on a bright afternoon, using as a target the regulation boulevard stop. With a 20-20 vision in each eye, the stop sign as well as the word STOP could be seen distinctly at 255 feet, both eyes open. With 20-30 vision in each eye, it was visible at 200 feet. With 20-70 vision, it was visible at 100 feet, 20-100 vision at 75 feet, and 20-200 vision at 50 feet.

"Testing the headlights of my own car, which were found to be legal, the same tests were tried on a dark night. With 20-20 vision in each eye, the sign could be seen at 150 feet; the word STOP could first be read at 75 feet. With 20-70 vision, the sign faded out at 25 feet. Where the word STOP was composed of glass disks, known as cat's eyes, the word became visible at 300 feet with 20-30 vision."

Visual fractions, as used in describing vision, have the following significance: 20-20 means normal vision; 20-30, 90 per cent of normal vision; 20-40, 85 per cent; 20-50, 75 per cent; 20-100, 50 per cent; 20-200, 20 per cent.

Many times the confusing conditions have developed long after the original signal installation. Would not a periodic tour of all signal and sign locations help to keep abreast of the changes? It should be relatively simple to meet troublesome conditions on new installations of signals and signs.

Justified criticisms are directed at many overhead signals. They are invariably painted green and suspended in a bower of green foliage. Home folks know where to look for them, but not so the tourist and stranger.

Where backgrounds cannot be changed, let us change the color of the signal cabinet. In some locations it might be best to have a "summer" and a "winter" paint job; in others a color producing the best year-'round contrast can be adopted.

Recommendations

Traffic control signals can be separated from a confusing background by:

(1) Screening the signal head by fastening a metal shield behind it, thus producing a blank area before the conflicting background;

(2) Adding another unit at a different location to supplement the handicapped one;

(3) Increasing the size of the lense or the intensity of the light;

LEFT SHOWS TOO MUCH COMPETITION BETWEEN POLES AND TRAFFIC SIGNS; CENTER SHOWS HOW A BACKBOARD INCREASES VISIBILITY; RIGHT SHOWS A STOP SIGN IN THE MIDST OF PLENTY

UNRULY CROWDS CONTROLLED

by Indian

When crowds begin to get unruly—men surge through police lines—women faint—you can keep them under control better with fast, mobile Indian Motocycles . . . speed ranking officers to points of stress in Indians equipped with side cars.

For flexibility, ease of handling and definite economy, Indian Motocycles completely outstrip any other form of police transportation. Indian "Police Specials" are specially constructed for gruelling police work—feature left-hand throttle, dry sump oiling, leaf spring front fork and other exclusive advantages.

Write for *proof!*

Indian Motocycle Co.
Dept. AC-10, Springfield, Mass.

FAST
FLEXIBLE
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Indian MOTOCYCLES
THE PRIDE OF THE FORCE

(4) So focusing the reflectors and lenses that they will sweep the safe approach area of all vehicles; and

(5) Painting the signal standards and heads with a color producing the greatest contrast with their background.

A sign can be rendered more visible:

(1) By changing its position slightly up or down;

(2) By moving it forward or backward so as to get away from the shadow of street lamps or the shade of trees;

(3) By clearing the curb of parked cars for a "safe braking distance";

(4) By increasing its size so that it will blank out a bigger area of conflicting background;

(5) As a further aid to the visibility of signs, the writer recommends that the standard stop sign be re-designed to include a black band at least 4 inches wide around the periphery of the sign, to be used where backgrounds tend to "smother" the sign. This black border will provide the maximum contrast and will certainly "cut" the sign right out of most backgrounds.

Neon Signs Indicate One-Way Traffic

By W. A. VAN DUZER
Director of Vehicles and Traffic, Washington, D. C.

THE Central Business District and Federal Triangle of the city of Washington lie directly to the north of the Mall, which is the public parks system between the Capitol and the Washington Monument. The Mall, in turn, is only several blocks north of the southern boundary of the city, the Potomac River.

Consequently, most of the traffic to and from the Central District comes from the north, east and west, with the majority entering directly from the north. In the mornings large volumes enter, and in the afternoons large volumes leave, with smaller volumes moving in the opposite direction. It is obvious that under these conditions the flow side of the streets will be taxed to capacity, while the other side will be far below its maximum carrying value.

In order to provide more roadway in the rush direction, the city of Washington designated eight streets as one-way rush-hour streets; that is, southbound from 7 A.M. to 9:30 A.M., and northbound from 4 to 6 P.M. The value of this method is illustrated by "before" and "after" traffic counts. The counts showed that during the hours of one-way operation these streets carried approximately 33-1/3 per cent more traffic in one direction than they formerly did in both directions, with consequent lower volumes and greater ease of movement in the rush direction of parallel streets without overloading the non-rush direction.

This scheme was immediately popular and proved nearly self-enforcing. Persons traveling in the correct direction would literally blow off the street anyone attempting to travel against the one-way flow. However, some trouble was experienced with persons who would enter against the one-way regulation without realizing their error. These persons were immediately blown off at the next intersection, but some danger and confusion resulted.

This, of course, was the fault of the markers used. These markers were black and yellow arrow signs placed at each intersection so as to be seen from each approach of the cross street. One arrow pointed south, with the words, "One-Way

7:00 A.M. to 9:30 A.M." Directly under this was another arrow pointed north, with the words, "One-Way 4:00 P.M. to 6:00 P.M."

These signs proved inadequate. They are confusing because they are in pairs; they do not indicate the hours of operation by a definite, unmistakable signal, but give this important information by words; and they are unsightly. In searching for a solution to the efficient marking of these one-way streets, we hit upon the idea of using Neon signs in the form of arrows. The design adopted is as follows:

The arrow is double-pointed, and between the two points are the words "One Way." In the morning the shaft and the southbound point are lit; in the evening the shaft and the northbound point are lit. These are steady-burning indications. During both periods the words "One Way" give a flashing indication. The time of these indications is automatically controlled by a weekly clock.

The flashing words attract the eye. The steady-burning arrow marks the direction of one-way movement, and the time of operation is indicated definitely, for the sign is entirely dark at other hours. The facts are seen at a glance—not so with the former sign.

At present we have but one sign in operation, but expect to install others throughout our system of one-way rush-hour streets. It is estimated that these Neon signs, produced and installed, will cost $40 each—$25 for the sign and $15 installation cost. As two signs are needed at each intersection, the initial cost per intersection will be approximately $80. The estimated cost per year for current consumption for each sign is $6.

Painted Traffic Lines on Brick Pavements

THE American Public Works Association has brought together in a pamphlet (price, 15 cents) some data on the experience with painted traffic lines, particularly on brick pavements, and summary data are given below.

The best results apparently are obtained by applying a good traffic-line lacquer with spraying equipment to a thoroughly dried pavement surface in warm weather.

C. L. Stine, City Manager, Pampa, Texas.—Very good results in maintaining traffic lines on brick pavements by first applying a coat of emulsified asphalt and then putting on the regular traffic paint.

B. I. Greenlee, Commissioner of Public Works, La Grange, Ill.—Best results from a slow-drying paint, say from 45 minutes to one hour.

J. M. Garrett, City Engineer, Montgomery, Ala.—Very best paint obtainable, without thinning.

Davenport, Iowa.—*Tropical* paint best, and some lines good after three years without repainting.

J. A. Williams, Superintendent of Public Works, Glencoe, Ill.—Orange or yellow is more distinct and seems to last longer than white.

Frederick T. Paul, City Engineer, Minneapolis, Minn.—A straight lead chromate in F.O.K. Bakelite varnish. The lines last about three months when spray-painted with this material.

Harry L. Fisher, City Engineer, Mobile, Ala.—Traffic lines on any surface soon wear off; believes that built-in lines are the only ones that will prove durable.

G. F. Schlesinger, Engineer-Director, National Paving Brick Association.—Use paving brick that contrasts with the main portion of the pavement.

William J. Galligan, Assistant Superintendent, Bureau of Streets, Chicago, Ill.—Submits the specifications for traffic paint now used by the city of Chicago, the Illinois State Highway Department, and the Chicago Park District. As a result of much experiment, specifications for paint have been developed which are producing much better results than any used heretofore.

W. B. Shafer, Superintendent, Bureau of Highways and Sewers, Pittsburgh, Pa.—Sends the Pittsburgh specification which has proved fairly satisfactory on brick surfaces if applied with spray equipment.

...and now it's **MILWAUKEE!**

Wisconsin city joins big parade of those using Western Electric Police Radio

Selects 1000 Watt High-fidelity Transmitter

After careful study of its police needs, and radio equipments available to meet them, Milwaukee selected a 1000 watt high-fidelity Western Electric transmitter. Seven transmitters of this same type are serving the Illinois State Police, and many of them are used by commercial broadcasting stations. Their performance is nationally famed.

Whether *your* need is to cover a small town, a big city, a county or an entire state, you'll find Western Electric equipment for just such service. For full details on 1-way and 2-way systems, write to Graybar Electric Co., Graybar Building, New York.

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POLICE RADIO TELEPHONE EQUIPMENT

Why not remember to mention THE AMERICAN CITY?

Improving Municipal Administration

Current Items from the Public Administration Clearing House

Toledo Peace Board Settles 62 "Strikes" Before They Occur

TOLEDO employers and labor leaders show growing confidence in the official Industrial Peace Board that celebrated its second birthday recently, reports the International City Managers' Association. With a record of settling 62 to 88 "cases" before they became strikes, the Board has acted on issues involving from one to 3,000 employees. During the first three weeks of August, six strikes involving 192 workers were averted after walkouts had already been voted and deadlines set.

The Toledo Industrial Peace Board is now part of the municipal government and is supported by funds appropriated by the city council, according to Public Management, publication of the International City Managers' Association. The 1937 appropriation of $7,250 provides for the salaries of the director and a secretary-stenographer, and all incidental expenses. There are 18 non-paid members of the Board.

Procedure of the Board is the same today as when the panel was created: it mediates, never arbitrates; suggests, never issues orders; operates with a minimum of publicity; never issues statements of opinion; and does not and cannot compel employers or labor organizations to meet with it.

Cities Are Zoning to Control Filling Station Placement

FOR economic and esthetic reasons, cities that find a gasoline station springing up on every other corner are becoming increasingly interested in how to control the number and placement of the very necessary but frequently oversupplied commodity. Their tools for restriction, according to Paul P. Oppermann, Assistant Director of the American Society of Planning Officials, are zoning, licensing and safety regulations.

The proper distribution of filling stations cannot be controlled by specific zoning regulations, Mr. Oppermann points out in *Public Management*, official publication of the International City Managers' Association. But the board of appeals may sometimes refuse a variance permit because of the over-supply. To make this proof possible, the board must have available facts on the number and location of filling stations over a period of years, trends in ownership, and gallonage sold by the stations in various locations.

Most zoning regulations confine gasoline filling stations to industrial districts, although the zoning board of appeals often uses its discretionary power to permit them in business districts. Control of the location of filling stations in residential sections is exercised by requiring the applicant to show to the board of appeals written consent of a certain percentage of the property owners in the neighborhood affected.

Dearborn, Mich., wrote this kind of provision on gas stations into its zoning ordinance several years ago: "Motor supply stations when so arranged and maintained as not to affect the normal development or use of neighboring property in the same district or in an adjoining residence district, only upon the authorization of the board of appeals after public notice and hearing . . ." require such approval. A unanimous vote of the board members is required to grant permits in cases where 50 per cent of the lots influenced have protested. Other cities with zoning ordinances having similar provisions are Winnetka, Ill., El Paso, Texas, Los Angeles, Calif., Colorado Springs, Colo., and Dayton, Ohio.

New York City prohibits public garages within 200 feet of a school or hospital. Other cities have applied this regulation to gasoline stations, and courts in at least six states have passed favorably on it. The same regulation has been used in church and theater neighborhoods.

Taxing the Auto-crats of the Folding Breakfast Table

TRAILER inhabitants—residents and vacationists—are now enjoying their best days, with respect to freedom from taxation for community services rendered, according to results of a survey announced today by the American Municipal Association. With the exception of a few scattered cities, municipal authorities have made almost no attempt to tax the auto-crats of the folding breakfast table to help pay for fire and police protection and other services.

Several thousand American cities interested in the implications of taxation and other problems posed by the trailer, will send representatives to discuss the subject to the forthcoming conference of the American Municipal Association, in Chicago, October 13-15.

Two cities that have undertaken to tax the trailer citizen are Peoria Heights, Ill., population 3,000, and Virginia Beach, Va., population 2,000. The Illinois town collects a direct, annual tax of $50 from every trailer. Virginia Beach restricts all trailer location to authorized camps, and demands from camp operators a license fee of $100 for the first five units or fewer; $25 for every additional five units or fewer. Both cities emphasize in their ordinances the obligation of the trailerite to contribute to the cost of community services.

Of 53 cities queried in the survey, 29 collect no tax whatsoever. Taxes in the other 24, except in Peoria Heights, are levied upon the trailer-camp operator in the form of an annual license fee. This fee, for an average camp of 30 units, ranges from $4.80 in Phoenix, Ariz., to $225 in Virginia Beach. Eleven cities collect $15 or less; ten collect from $16 to $50. Pasadena, Calif., collects $165. Annual revenue from 30 units under the Peoria Heights plan would be $1,500.

The tax for local services levied as a camp license fee does not reach the bulk of the trailer population, since only 17 cities restrict location to authorized camps. Of the 36 cities permitting location at the trailer traveler's will, only 15 require issuance of a permit, and only 5 collect a fee for such a permit: Miami, Pasadena, and East Cleveland charge $1; Harvey Cedars Borough, N. J., $2; Peoria Heights, $50. Nine of these cities have established time limits for trailer-stays. The limit varies from 24 hours, in Janesville, Wis., Long Beach, Calif., and Seattle, to 90 days in any 12-month period in Pasadena.

Cities Draft Three-Way Drive on Litter

"CLEAN UP WEEK," a common feature in many American cities and towns in the spring, has developed into a trend toward a year-round battle on rubbish.

A drive for cleaner streets may be waged along three general lines, according to Stanley I. Pinel, Research Director of the American Public Works Association. Often all three are used together. They are:

(1) An actual clean-up campaign to collect and dispose of existing street litter, and to provide some arrangement for periodic cleaning thereafter.

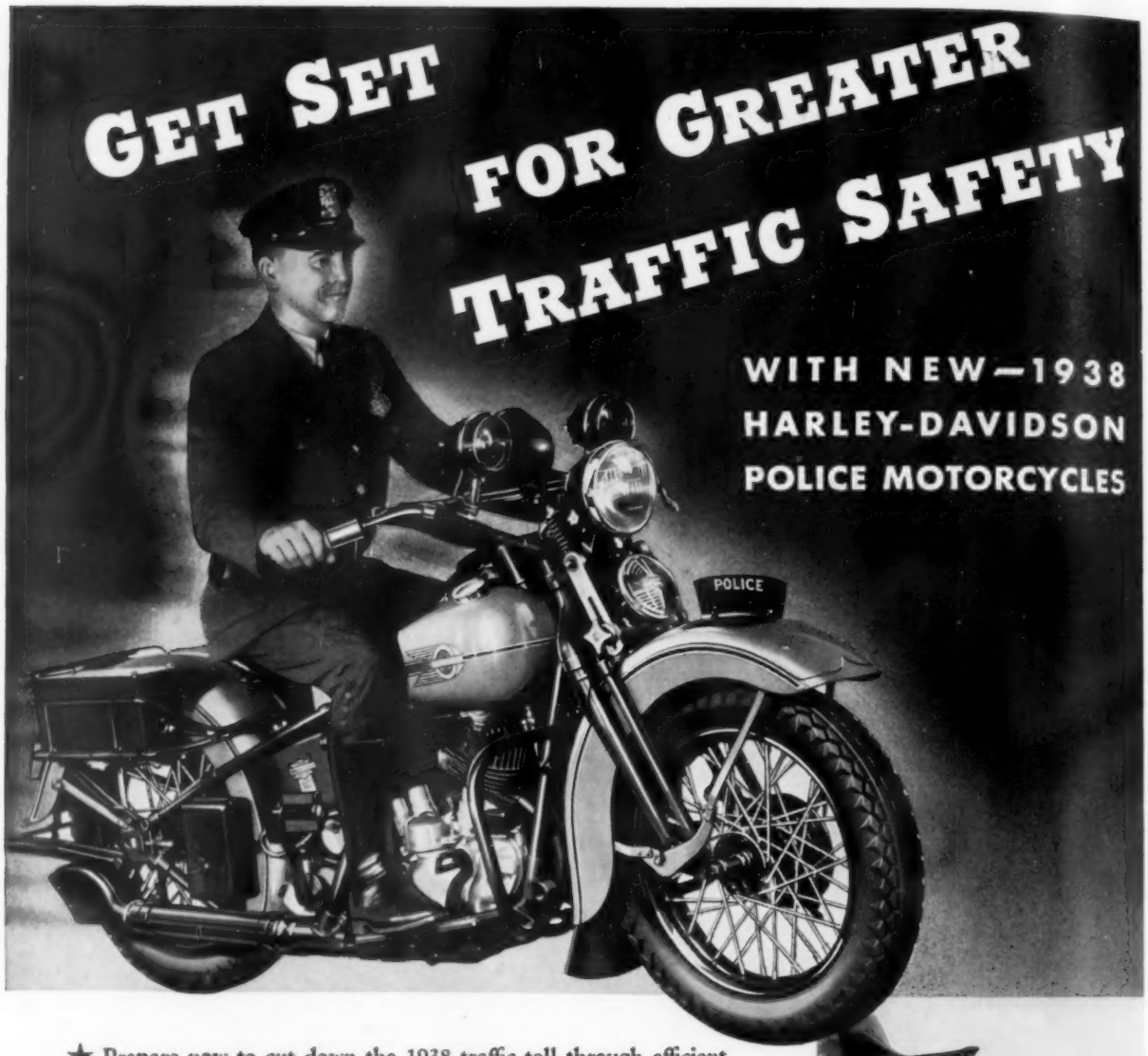
(2) A drive to enact and enforce ordinances requiring property owners and householders to keep premises and sidewalks clean, and to make it illegal to throw litter on a street or sidewalk.

(3) A preventive campaign to gain the cooperation of all citizens to avert the littering of streets.

"Of the three," says Mr. Pinel, "the preventive campaign is usually the only kind that has any lasting benefit. Schools in particular, civic clubs, churches, movies and newspapers have been enlisted by cities successful in such activity. This kind of campaign, naturally, must be conducted over a rather long period; in fact, it should be more or less continuous and eventually become a regular part of school activities."

A number of cities have anti-litter or-

GET SET FOR GREATER TRAFFIC SAFETY



WITH NEW—1938 HARLEY-DAVIDSON POLICE MOTORCYCLES

★ Prepare now to cut down the 1938 traffic toll through efficient patrol of streets and highways. Many cities have established enviable records proving the outstanding value of having uniformed officers on motorcycles where they can be seen — where their presence puts the "brakes" on recklessness and speeding.

Equip your squads with the new 1938 Harley-Davidson Police Motorcycles. New features include, magnetic handlebar-operated speedometer hand stop, red and green signal lights for oil pressure and generator charge, streamlined siren, greatly strengthened frames, inter-connected brake shoes in service brakes, timing gears run in oil bath, and compression-type oil pipe connections. These and other improvements and refinements make these new 1938 models the ideal vehicles for fast, dependable, low-cost police service.

Phone your nearby Harley-Davidson Dealer NOW—to bring over a new 1938 model for your inspection. Or write us for literature.

HARLEY-DAVIDSON MOTOR CO. *Dept. M,* Milwaukee, Wis.

HARLEY-DAVIDSON
The Police Motorcycle

New high impedance screen type antenna, up away from dirt, grime, and grease. Compact and light in weight. Saddle bag mounting of radio receiver brings weight way down low.

dinances, which prohibit dumping on sidewalks, streets and vacant lots of specific kinds of refuse, from Christmas trees and grass cuttings to worn-out automobiles or parts. Some cities impose fines as high as $50 or $100 for violations, but $5 and $10 are the usual penalties. Since 1932, May in Minnesota has meant clean-up month for all cities, by order of the State Board of Health. Newspaper notices request citizens to brush up yards and sidewalks. Other cities, waging campaigns of a week's duration, report accomplishment by appointing block captains in school civics classes, to report careless disposal of rubbish; or women supervisors are appointed to check undue untidiness of premises in various sections.

Manchester, England, conducts a clean-up week each year, utilizing a variety of means to call attention of citizens to civic duty. Besides the usual public posters and radio talks, news of the city-wide clean-up appears on bookmarks which are handed out with each library book; gas bills and milk-bottle caps may carry labels stressing the subject; a traveling news sign repeats slogans in the public square; loudspeaker vans move about the city calling attention to those who throw their candy-bar wrappers into the gutter instead of placing them in the litter baskets; and the city finances a 7-minute film, "Let's Talk Rubbish," through which the Sanitation Department can explain its concern for neatness to the movie-going public.

300,000 *Transients Pose Knotty Problems*

THE hobo, boy-of-the-road, box-car girl and other homeless vagrants came in for a great deal of editorial and fictional attention during the depression years. But the welfare worker today insists that the major problem of transiency rests not with this group, which is comparatively small, but with the migratory worker and the transient reliefer. Dependent transients in this country are estimated roughly at 300,000.

Although recovery has absorbed some of them, it is obvious that migration will continue, even in prosperity. The problem is particularly acute just now in vacation states and in the year-round "health-haven" states, such as Florida and California. Hitherto, states and cities have been prone to discourage transiency, rather than to apply remedies for it. Now the problem gradually comes to a focus, with Federal, state and local governments fully aware of it and seeking a solution. Their expressed goal is an established policy of government which will recognize a continuing responsibility for the welfare of non-settled persons, on the basis that mobility is a national economic necessity, but that it should not become a barrier to social security.

Governmental activity within the last eighteen months proves that the unsolved problem of the transient unemployed is really coming into focus. A Uniform Transfer of Dependents Act, reaching the inter-state aspects of transiency, has been approved at recent conferences of the American Public Welfare Association and the Council of State Governments. The general problem also has been vigorously attacked by the Committee on Care of the Transient and Homeless, and the National Tuberculosis Association. Florida has its Transient Coordinating Committee hard at work. California and Texas have organized state-wide committees sponsored by their respective state conferences on social work. Michigan, through its Bureau of Unattached and Homeless Persons, has continued its transient program on a state-wide basis, and New York has given the problem adequate attention.

Police Executives to See "Breath Test" for Drunken Drivers

THE "breath test," newest scientific device for attempting to determine how intoxicated a drunken driver really is, receives increased attention among police as the movement for traffic safety spreads, the International Association of Chiefs of Police said today. Dr. R. N. Harger, of the Indiana School of Medicine, Indianapolis, is the scientist who has developed the breath test over the past several years.

The breath test already has been adopted as a standard procedure by the State Police of Indiana, and the Berkeley, Calif., Police Department has just installed it, with twelve men trained to use it. Meantime, scientific experiments continue, and further validations of the breath test as a method of determining the relative intoxication of drinking drivers are under way.

In the breath test, a tube is held before the subject without touching him. Samples of his breath are pumped through chemicals, which are selected to show the content of alcohol in the breath. Advocates of the plan say that the test gives a good rating of the actual extent of drunkenness, regardless of the "tolerance" of the subject to alcohol.

Police officials hope that the test will prove to simplify one of the most confused subjects in relation to automobile safety—determination of just how intoxicated a man must be to be an unsafe driver, and to gather admissible evidence to convict him in court. A demonstration of the test will be conducted before assembled police executives at a special program on automobile safety on October 6 in connection with the annual convention of the International Association of Chiefs of Police in Baltimore.

Other subjects on the traffic safety program of the convention will be the "Importance of Police in Traffic Safety," by Paul Hoffman, President, Automotive Safety Foundation; "Progress of the I.A.C.P. Program," by Lieut. Franklin M. Kreml, Director, Traffic Safety Division; and "Lifesavers of the Highway," a film prepared by the traffic division of the I.A.C.P. Another session will be devoted to traffic control and accident prevention, at which Dr. Harger will demonstrate the breath test.

Recent City Manager Appointments

CARL FUEHRER, Assistant City Manager of Carlisle, Pa., has been appointed City Manager of Milton, Pa., to succeed C. C. Congdon, who resigned to become first City Manager of Shillington, Pa.

P. A. Goodwyn succeeded James F. McCrary as City Manager of Bristol, Va., on September 1.

C. H. Gray has succeeded L. A. Markham as City Manager of Terrell, Texas.

Fred J. Johnston, Federal Engineer stationed at Santa Barbara, has accepted the post of City Manager of Coronado, Calif.

Glen V. Leland, Finance Director, has become City Manager of St. Petersburg, Fla. He succeeds A. F. Thomasson.

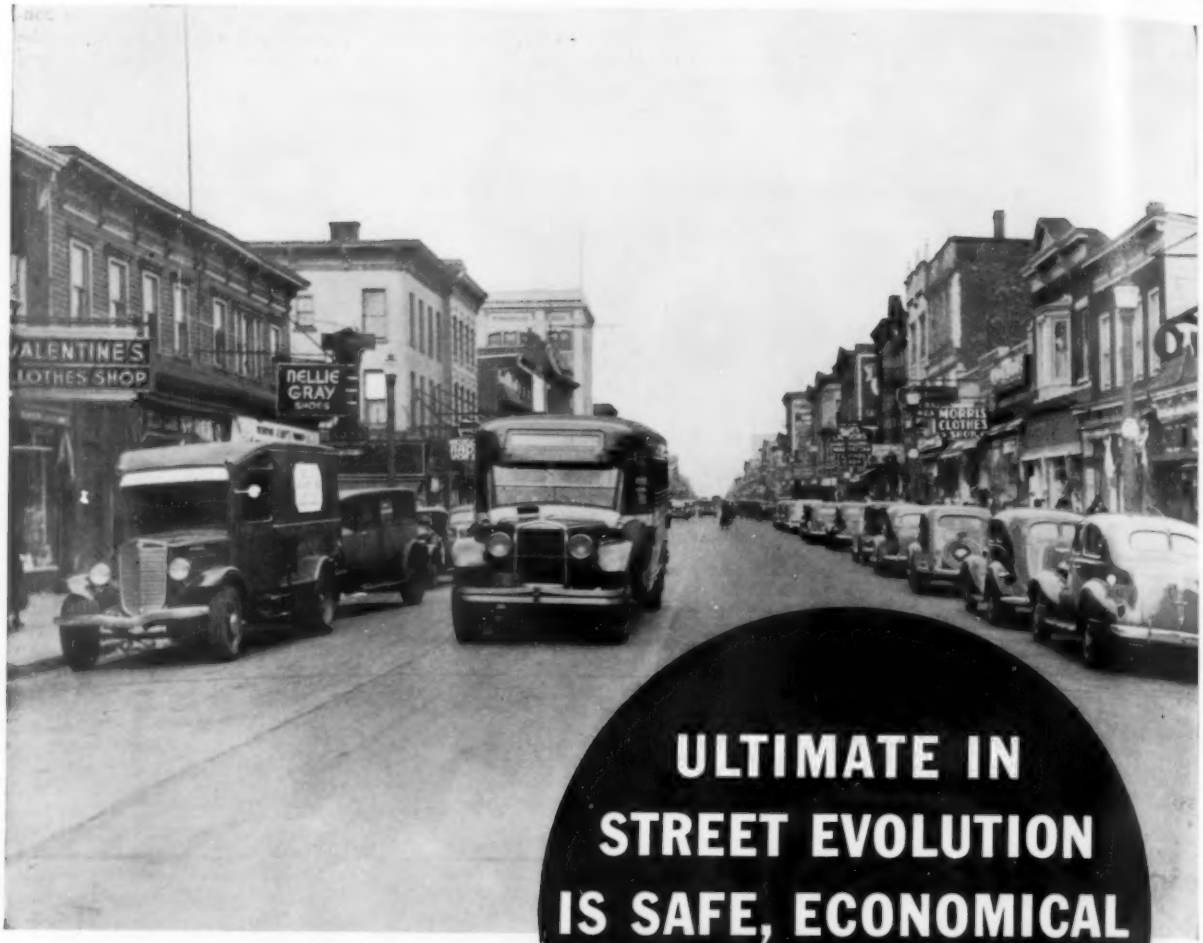
S. J. Mahaffey, State Highway Engineer from Petersburg, became City Manager of Franklin, Va., on October 1. He succeeds J. W. B. Thompson, who resigned to go into private business.

CLARENCE E. RIDLEY,
Executive Director, International City Managers' Association.

The Municipal Bond Market

Recent sales of new issues from September numbers of *The Bond Buyer:*

Amount	Borrower and Purpose	Rate (%)	Term (Year)	Basis (%)
$145,000	Brockton, Mass., Relief	2	5.33 Avg.	1.97
3,000,000	Missouri, Building	3	5.33 Avg.	2.00
1,000,000	Minneapolis, Minn., Public Relief	2.30	1-10 Ser.	2.27
150,000	Huntington, N. Y., General Improvement	2.5	1-15 Ser.	2.45
127,000	Waynesboro, Pa., School, Funding and Refunding	2.5	11.33 Avg.	2.46
100,000	Alameda Co., Calif., School	2.75	1-20 Ser.	2.746
441,000	Mt. Lebanon Tp., Pa., School	3	12.66 Avg.	2.83
4,800,000	Boston Metropolitan District, Mass.	2.75	17.5 Avg.	2.911
500,000	Lackawanna, N. Y., Improvement	3	5.33 Avg.	2.92
385,000	Baltimore, Md., Metropolitan District	3	20.86 Avg.	2.96
500,000	Summit Co., Ohio, Refunding	3	5-9 Ser.	2.97
800,000	St. Louis Co., Mo., Judgment Funding	3	13.66 Avg.	2.99
110,000	Darlington Co., S. C., Highway Reimbursement	3.25	8-17 Ser.	3.18
135,000	Manning, Iowa, Electric Light Plant Revenue	3.5	8.33 Avg.	3.38
300,000	Shaker Heights, Ohio, Refunding	3.5	10.5 Avg.	3.41
500,000	Jefferson Co., Ala., Court House and Jail	3.5	18.86 Avg.	3.65
180,000	Refugio Co., Texas, Road District	4	14 Avg.	3.98
175,000	Fernandina, Fla., General Improvement	4.5	14.66 Avg.	4.45



Broadway, Bayonne, N. J., now paved with concrete over its 3-mile length. Heavy traffic was handled and fire protection assured by keeping at least one lane open during construction. High early strength cement concrete permitted early use of new pavement. Designed and built under direction of Walter L. Clarkson, city engineer.

ULTIMATE IN STREET EVOLUTION IS SAFE, ECONOMICAL

Concrete

• Half a century ago, Bayonne's main street was a plank road. Then, like many a street, it was paved, repaved, and repaired until further maintenance became an economic burden.

Today, "Plank Road" is Broadway —and its pavement will "stay put" because it is enduring, economical concrete.

Hundreds of other cities have "come to" concrete. Concrete will save money for your city because—

- Its first cost is less than for other pavements of equal load-carrying capacity.
- It serves with minimum upkeep.
- Its high visibility permits up to 30% saving in cost of proper illumination.

Build your next streets with concrete and get your money's worth.

PORTLAND CEMENT ASSOCIATION, Dept. 10-4, 33 W. Grand Ave., Chicago, Ill.

A National Organization to Improve and Extend the Uses of Concrete

Why not remember to mention THE AMERICAN CITY?

Prepared by
FRANK B. WILLIAMS
Author of "The Law of City Planning and Zoning"

Zoning and Planning Notes

With the cooperation of
EDWARD M. BASSETT
Author of "Zoning: The Laws, Administration and Court Decisions During the First Twenty Years"

Billboards

MICHIGAN.—*Wolverine Sign Works v. City of Bloomfield Hills*, 271 N. W. 823 (Supreme Court, March 2, 1937).—Clara E. Benedict is the owner of a tract of unplatted, vacant land fronting on Woodward Avenue in the city of Bloomfield Hills. She rented billboard location space to the plaintiff, the Wolverine Sign Works, and it erected three billboards on the property, two about 52 feet long by 16 feet in height, and a third somewhat smaller. The larger boards stand back about 50 to 100 feet from the highway line and are from 600 to 800 feet from Miss Benedict's house, the nearest building. The smaller board is about 40 feet from the highway line. The billboards have been kept in repair and carry commercial advertisements. The claim of the city is that these boards violate city ordinances and zoning restrictions.

The ordinances may be generally described as forbidding the construction or maintenance of billboards within the municipality without a permit from the Municipal Commission, which may be obtained upon proper showing that the construction and maintenance of the billboard will not be offensive to the inhabitants of the village or detract from the beauty of the surrounding neighborhood.

The Court holds the ordinances to be void on the ground that esthetics may be an incident but cannot be the moving factor in restriction under the police power. The opinion recognizes the fact that zones may be established regulating billboards, but holds that the ordinances in question are void, on the ground that esthetics may be an incident but cannot be the basis of such regulations.

There is a dissenting opinion.

NEW YORK.—*Matter of Mid State Advertising Corporation v. Bond*, 274 N. Y. 82 (Court of Appeals, April 27, 1937).—An ordinance of the city of Troy provides that:

"It shall be unlawful to construct or erect any billboard and/or signboard within the corporate limits of the city of Troy except on real property owned or leased by the occupants thereof and for the sole purpose of advertising the sale of such real property or of merchandise kept for sale upon such premises."

The Mid State Advertising Corporation applied to the city for permits to erect billboards for general advertising purposes on its property in the city. The application was denied under the ordinance. And this Court holds the denial to be improper, saying in its opinion:

"We think the ordinance is void on its face. It is not an attempt by zoning to exclude billboards or other advertising signs from localities where such devices might mar the beauty of national scenery or distract travelers on congested city streets. Even were we to assume that outdoor advertising on private property within public view may without compensation be restricted by law for cultural or esthetic reasons alone, this prohibition, which includes *all* land in the city of Troy, without definition of the structures proscribed or other standard of regulation, cannot be sustained consistently with fundamental constitutional principles."

One Judge dissents, in an opinion citing recent decisions.

EDITOR'S NOTE.—It should be observed that this ordinance was not a zoning ordinance. If the provision had been part of a well-considered general zonning regulation, under which billboards were restricted to certain sections of the city, the decision, as many recent cases show, might well have been different.

Non-Conforming Use—Extension

NEW JERSEY.—*Home-Fuel Oil Co. v. Borough of Glen Rock*, 102 Atl. 516 (Supreme Court, June 9, 1937).—A non-conforming use allowing the erection of oil tanks of 100,000-gallon capacity cannot be increased by new construction to a capacity of 440,000 gallons, as continuance of a non-conforming use. The spirit of the Act is to restrict rather than increase non-conforming use; and "continuance" is continuance of same kind of use, but the increase makes the use a different use, which is not permitted.

NEW YORK.—*Matter of Vogl*, Supreme Court, Westchester County, reported in *New York Law Journal*, July 12, 1937, page 111.—This is a certiorari proceeding to review the decision of the Zoning Board of Appeals of the town of Mount Pleasant, which denied the petitioner's application to extend a building that had been for many years in non-conforming use as a tea room and restaurant.

This Court sustains the Board of Appeals, saying in part:

"I am inclined to think that the extensive improvements contemplated by this application would practically result in changing the premises from a small and comparatively unobjectionable restaurant or tea room into a large roadhouse, and that this would be a change of a non-conforming use to a lower classification."

Non-Conforming Use—Abandonment

NEW JERSEY.—*Campbell v. Board of Adjustment, South Plainfield*, 191 Atl. 742 (Supreme Court, April 27, 1937).*—Campbell owned and operated a gasoline and service station in March, 1932, when the borough enacted a zoning ordinance placing his property in the residence district. He was then given a non-conforming use certificate. The station was not operated from November, 1931, to May, 1933, when the premises were leased to another who carried on the business until October of that year, when Campbell resumed the business for one month. Since that time the premises were vacant due to the inability of obtaining a tenant.

Campbell applied for a certificate of occupancy to reopen the service station, and his application was denied by the Board of Adjustment. . . . He appealed this decision to the Supreme Court of New Jersey.

The zoning statute provided that:

"any non-conforming use or structure existing at the time of the passage of an ordinance may be continued upon the lot or in the building so occupied, and any such structure may be restored or repaired in the event of partial destruction thereof."

The Supreme Court decided:

"We think the prosecutors were entitled to their certificate. The statute preserves such rights of use as they existed at the time of the adoption of the ordinance. There was certainly a non-conforming use at that time in this case, and the property had at no time been changed to a conforming use. The prosecutors testified that an intended non-conforming use was never abandoned, and certainly the inability to carry on the business can hardly be said to change its character."

Garage

NEW YORK.—*Matter of Love Lane Automotive Corporation*, Supreme Court, Kings County, reported in *New York Law Journal*, August 18, 1937.—A grant of the right to erect a "garage restricted to a three-story structure" gives no right to use the roof of such a structure for the open-air storage of automobiles. Such use was illegal, and when the Board of Standards and Appeals of New York City gave permission to erect enclosing walls and a roof on the structure, and thus make a new fourth story, they changed the former illegal use to a legal one. And this action by the Board was within its powers. The Board has wide scope in the exercise of the discretion committed to it, and it cannot be said that its action in this case was arbitrary or unreasonable or unjustified as a matter of law.

Esthetic Nuisance

WEST VIRGINIA.—*Parkersburg Builders Material Co. v. Barrack*, 191 S. E. 368 (Supreme Court of Appeals, May 11, 1937).—The operation of an automobile-wrecking business on a lot enclosed by a barbed wire fence in a section of the city which was not clearly established as a residential community will not be enjoined as a nuisance merely because of its unsightlessness; an automobile junk yard is not necessarily an objectionable place. The business is useful and honorable. But an outdoor layout of a business of that kind necessarily is not pleasing to the view. Such business, therefore, should not be located in a community of unquestioned residential character. This section, however, is not a clearly established residential community; and a court of equity is not warranted in excluding the business from it merely on the ground of unsightliness.

* From the Zoning Notes of the Chicago Regional Planning Association.

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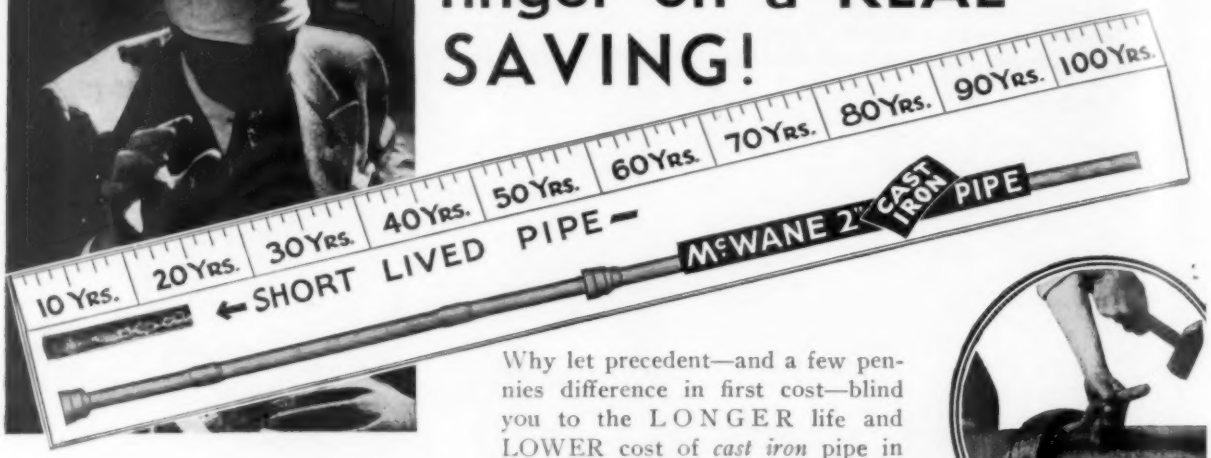

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Accidents

City held liable for injury to pedestrian when coal-hole cover in sidewalk tilted, a defective condition having long continued (Kansas City Court of Appeals: *Green v. Kansas City*, 107 S. W. 2d, 104).

City held not liable for negligence of officials or employees resulting to child when park swing chain broke, and councilmen held not liable unless individually negligent (Oregon Supreme Court: *Etter v. City of Eugene*, 69 Pac. 2d, 1061).

City and officials held not liable for injury to visitor to municipal court-house, due to defective step in approach to entrance (New York Supreme Court, New York County: *Yochelson v. City of New York*, 297 N. Y. Supp. 213).

Statute requiring service of personal injury claim on corporation counsel and comptroller held not satisfied by serving only one of them (New York Supreme Court, Kings County: *Cianci v. City of New York*, 296 N. Y. Supp. 840).

City held not liable for injury to youth who found unexploded Fourth of July bomb in park after celebration and lighted it, merely because city permitted civic association to hold fireworks display (Ohio Court of Appeals, Hamilton County: *Schwarz v. City of Cincinnati*, 9 N. E. 2d, 3).

That she was only twelve years old held not to excuse personal injury claimant's failure to comply with statute requiring giving notice of accident (Tennessee Supreme Court: *Robinson v. City of Memphis*, 105 S. W. 8d, 101).

Water-works Superintendent held not entitled to recover against city for injury in explosion of air compressor (Texas Court of Civil Appeals: *City of Teague v. Radford*, 105 S. W. 2d, 336).

Association Benefits

That a fireman was not a United States citizen when he joined a fire department held not to preclude his widow from recovering a statutory burial benefit, he having become a citizen before service certificate was issued to him (New Jersey Supreme Court: *Taffey v. New Jersey State Firemen's Assn.*, 192 Atl. 725).

Bond Issues

Because, in New England states, private real estate may be levied on by municipal creditors, held that a constitutional amendment so limiting real estate taxation as to leave inadequate means of paying municipal bonds would not violate Federal constitutional prohibition against impairment of the bondholders' contractual rights (Massachusetts Supreme Judicial Court: *In re Opinion of the Justices*, 9 N. E. 2d, 189).

Business Regulations

Ordinance regulating auctions held not sustainable as a valid police regulation (Florida Supreme Court: *Perry Trading Co. v. City of Tallahassee*, 174 So. 854).

Cemeteries

Municipal prohibition against further interments in a long-neglected cemetery in which interments were not made for 25 years upheld (Alabama Supreme Court: *Alosi v. Jones*, 174 So. 774). But an ordinance forbidding interments in a particular tract of a cemetery not shown to constitute a nuisance was held to be void (Illinois Supreme Court: *Rosehill Cemetery Co. v. City of Chicago*, 8 N. E. 2d, 664).

Contracts

City's lease to corporation of industrial and tidewater terminal upheld (New Jersey Supreme Court: *Shea v. Ellenstein*, 193 Atl. 551).

City held not liable for architects' services under contract where no properly appropriated funds were ever available for payment (New Jersey Court of Errors and Appeals: *Frank Grad & Son v. City of Newark*, 193 Atl. 177).

Acceptance of lowest bid for typographically printed index books upheld, though higher than lowest bid for lithographic index (New York Supreme Court, Appellate Division: *Amalithone Realty Co. v. City of New York*, 297 N. Y. Supp. 262).

Department Consolidation

Ordinance consolidating in Department of Public Works all city's automobile repair shops upheld (Kentucky Court of Appeals: *Bower v. City of Louisville*, 107 S. W. 2d, 238).

Donations

Legacy to city for hospital held to have lapsed for failure for many years to take steps to establish a hospital, despite a resolution formally accepting the gift (United States District Court, Northern District of Illinois: *Seibold v. City of Naperville*, 19 Fed. Supp. 281).

Initiative Proceedings

An initiative petition for proposed charter amendments held insufficient to require election where signatures were not followed by designation of signers' ward and precinct as required by statute (Ohio Supreme Court: *State v. Addison*, 9 N. E. 2d, 148).

Licenses

Ordinance imposing license fees and requirement for indemnity bonds against house movers upheld (Nebraska Supreme Court: *State v. Phillips*, 274 N. W. 459).

Ordinance imposing license requirements against "public dances" or "dance halls" held not to apply to restaurants permitting patrons to dance (Colorado Supreme Court: *Cosmos v. City and County of Denver*, 70 Pac. 2d, 341).

Ordinance licensing sale of ice cream held invalid in provisions attempting to regulate nonresident manufacture and in granting arbitrary power to the commissioner of health (Illinois Supreme Court: *City of Rockford v. Hey*, 9 N. E. 2d, 317).

City held entitled to impose license tax on automobile insurance premiums collected by non-resident company on business done in city, although policies were not issued there (Alabama Supreme Court: *City of Sheffield v. General Exchange Insurance Corp.*, 174 So. 782 and *City of Sheffield v. Home Insurance Co.*, 174 So. 779).

Refusal of junk dealer's license because applicant was previously convicted of unlawfully receiving junk (New York Supreme Court, Lewis County: *Dening v. Cooke*, 295 N. Y. Supp. 724).

Ordinance forbidding solicitation of orders for goods by non-resident merchants held void (Maryland Court of Appeals: *Jewel Tea Co. v. Town of Bel Air*, 192 Atl. 417).

Municipal Salaries

Ordinance fixing minimum salaries for officers and employees upheld against various contentions of invalidity (Texas Supreme Court: *Taxpayers' Association of Harris County v. City of Houston*, 105 S. W. 2d, 655).

Municipal Utilities

City held to have so far abandoned use of its electric plant as to entitle private company to enjoin city from resuming service in competition with it, without a state permit and without electoral assent (Indiana Supreme Court: *Public Service Co. v. City of New Castle*, 8 N. E. 2d, 821).

Water user held entitled to recover payment made under protest for water consumed by tenant, in order to secure service, there being no lien against the property (Massachusetts Supreme Judicial Court: *B. & B. Amusement Enterprises v. City of Boston*, 8 N. E. 2d, 788). To same general effect, see *Cambridgeport Savings Bank v. City of Boston*, 8 N. E. 2d, 790).

Electric company held not entitled, as competing utility, to question city's right to establish a plant, nor to complain as a taxpayer, for want of proof of damage (United States District Court, Western District of Missouri: *Missouri Public Service Corp. v. Fairbanks, Morse & Co.*, 19 Fed. Supp. 45). For prior opinion, in which a temporary injunction had been issued in favor of complainant, see 19 Fed. Supp. 38. There the same court ruled that the city's contract for a plant was invalid for want of proper notice to bidders.

Official Declination

Statute treating appointee's failure to qualify within ten days as declination of appointment held mandatory, necessitating another appointment (Arkansas Supreme Court: *Hickey v. Hargraves*, 105 S. W. 2d, 88).

Official Tenure

Where City Clerk validly elected was re-elected at void election, held that no vacancy existed and he was entitled to office and compensation as against another claiming under appointment made on the theory of vacancy (Indiana Supreme Court: *City of Aurora v. Morten*, 8 N. E. 2d, 972).

Police Departments

City Marshal's sureties held liable for death caused by him in using excessive force to arrest an offender (Springfield, Mo., Court of Appeals: *City of Festus v. Kausler*, 105 S. W. 2d, 646).

Ordinance forbidding persons to appear on streets other than in "customary street attire" held void as being indefinite (New York Court of Appeals: *People v. O'Gorman*, 8 N. E. 2d, 862).

Ordinance requiring persons congregating in streets to disperse on order of police officers upheld (Washington Supreme Court: *City of Tacoma v. Roe*, 68 Pac. 2d, 1028).

Salaries

Though mandamus proceeding, to require payment of amount of salary reductions, was dismissible for omission of allegation that funds were available to pay, held, on the Court's treating the proceeding as one for a declaratory judgment, that the salaries were validly reduced (Wisconsin Supreme Court: *Silgen v. City of Fond du Lac*, 274 N. W. 256).

Special Assessments

In a municipality's action to foreclose special improvement assessments, jurisdiction over nonresident parties in interest held validly secured through publication service of summons (South Carolina Supreme Court: *Town of Cheraw v. Turnage*, 191 S. E. 831).

Reapportionment and reassessment held improper unless original assessments were illegal (Nebraska Supreme Court: *Village of Winside v. Brune*, 274 N. W. 212).

State held empowered to make the cost of sidewalk construction a lien against abutting property, subject to general tax liens only, and then to repeal or modify the law (Louisiana Court of Appeal: *State v. Coverdale*, 175 So. 492).

Taxpayers' Suits

Taxpayers held empowered to sue to compel city commissioners to account for public funds converted to commissioners' personal use (Florida Supreme Court: *Armstrong v. Richards*, 175 So. 340).

Water Supply

City's answer in mandamus proceedings by State Director of Health to compel water-works improvements held not to state valid defenses (Ohio Supreme Court: *State v. City of Springfield*, 9 N. E. 2d, 675).

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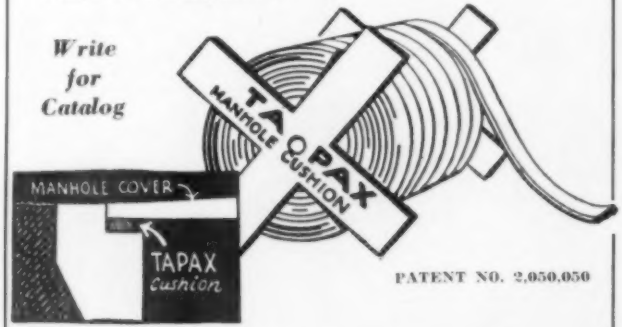

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Cities in the National Economy

The Urbanism Committee of the National Resources Committee has released a report entitled "Our Cities—Their Role in the National Economy." With the city as the throbbing center of American life it is strange that we have not paid more attention to its orderly development. Rapid growth, speculation in property values, uncontrolled subdivisions, and other factors, have led to haphazard development which has reached a stage of seriously threatening the very existence of many city dwellers. This report is a keen analysis of the city and its problems as we look upon it today. Conditions are clearly and forcefully stated, and recommendations for their improvement are unhesitatingly set forth. 88 pp. 50c. (Apply to the Supt. of Documents, Washington, D. C.)

Planning

The 1937 issue of "The American Planning and Civic Annual" will be ready for distribution early in October. It contains the usual fine collection of papers showing recent progress in national, state, regional, county and city planning. $3.00. (Apply to the American Planning and Civic Assn., 901 Union Trust Bldg., Washington, D. C.)

Water Works

The Kentucky-Tennessee and the Southeastern Sections of the American Water Works Association held a joint meeting this year, the proceedings of which are published in the *Journal, Southeastern Section, American Water Works Association.* The papers and discussions cover a broad field and should be of general interest to persons operating water-works properties in other parts of the country as well as of particular interest locally. 116 pp. (Apply to Southeastern Section, American Water Works Assn., 310 Protective Life Bldg., Birmingham, Ala.)

Measuring the Tax Burden

The Detroit Bureau of Governmental Research is making a comprehensive study of American tax systems. A preliminary report entitled "Measuring the Tax Burden of Low-Income Groups" has just been prepared and published on the basis of questionnaires from 16 cities. The study sums up the total state and local taxes on a home appraised at $5,500 in each of the 16 cities. The summary data are then discussed, and the trends indicated are pointed out with proper attention to the scantiness of the evidence. 8 pp. (Apply to the Detroit Bureau of Governmental Research, 5135 Cass Ave., Detroit, Mich.)

Liquor Control in Michigan

"Liquor Control in Michigan Municipalities," by Ellsworth B. Cummings, reveals problems which arise universally over the dispensation of liquor. Michigan, along with 14 other states, is experimenting with a state monopoly, somewhat modified by the participation of the private dealer in profits from the retail sale of the stronger forms of liquor. The purpose of such a system is to reduce the private profit incentive in the sale of liquor, to provide a new source of public revenue, and to maintain a strict control over the liquor business. This pamphlet deals with the actual manifestations of the law as it exists in Michigan municipalities at present. A large number of cities have failed to exercise their prerogatives of regulation to any great extent. The problems which have appeared the most troublesome in the 317 reporting municipalities are the sale of spirits by the glass, unauthorized in 224 out of the 317; the limitation of the number of licenses issued, since cities are apt to be too anxious to receive the fees; proper division of revenue receipts between state and local governments; and various local problems such as closing hours, age limits and sale to minors, dancing and Sunday rules. 46 pp. $1.00. (Apply to the Michigan Municipal League, 205 S. State St., Ann Arbor, Mich.)

Shopping Districts

Shopping Districts.—By S. R. De Boer. Published by the American Planning and Civic Association, 901 Union Trust Bldg., Washington, D. C., 1937. 112 *pp.* $1.00.

The location and arrangement of business centers can assure beauty and convenience to the city, or the opposite. The greater part of our population does its shopping in person, and it stands to reason that the store located in a logical place, with parking conveniences, an attractive building, and a well-arranged stock, is going to capture the cream of the business. This volume makes somewhat of an analysis of the best locations and best treatment of buildings for different types of business. It should be of aid in guiding city building toward greater beauty and efficiency and greater business values.

Highway Conference

"Proceedings of the Twenty-Third Annual Highway Conference, Held at the University of Michigan, February 16 to 18, 1937" is the outcome of a meeting held under the direction of the College of Engineering of the University of Michigan with the cooperation of the Michigan State Highway Department, the Michigan Association of Road Commissioners and Engineers, the Michigan Good Roads Association, and the Michigan Department of Public Safety. Papers by outstanding authorities cover the fields of highway design, construction and maintenance; accident prevention; and traffic control. Several papers on the financing of highways are included. 184 pp. (Apply to the University of Michigan, Ann Arbor, Mich.)

Minnesota Year Book

The Minnesota Year Book, 1937, is off the press. The latest figures for assessed valuations, taxes, tax rates, and indebtedness in the various government units are given, as well as data on some other phases of state government. The information is given in simple tabular form, and comparative figures for earlier years are presented so far as possible. A brief analysis of the new legislation enacted by the 1937 sessions is included. 385 pp. $5.00. (Apply to the League of Minnesota Municipalities, 15 University Library, Minneapolis, Minn.)

Street Railway Track Removal

"Financing Street Railway Track Removal and Repaving" is a report prepared by the International City Managers' Association in cooperation with the American Municipal Association and the American Public Works Association. Many cities are faced with the problem of track removal in their flight to buses. Trenton, N. J., in the fall of 1936, decided to ascertain the experience of other cities in solving this problem and sent an inquiry to the officials of 50 cities. This report is a digest of replies from 37 cities and a statement of the situation in Trenton. 14 pp. 25c. (Apply to the American Public Works Assn., 850 E. 58th St., Chicago, Ill.) (See THE AMERICAN CITY for September, 1937, p. 121.)

Regional Park Progress

Information Bulletin No. 38 of the New York Regional Plan Association is entitled "Expansion and Development of Parks a Notable Achievement in Regional Progress." The recent additions of area and equipment to parks inside and around New York City are measured, showing a 32 per cent increase in acreage in eight years, and a far greater increase in facilities. Outside the city the emphasis has been placed most strongly on the improvement of old areas, while inside the city the increase has been phenomenal in both improvement of the old and acquisition of the new. Figures of park attendance are extraordinary. This 12-page bulletin contains maps, figures, photographs and descriptions, assuring a thoroughly enlightening progress report. (Apply to the Regional Plan Assn., Inc., 400 Madison Ave., New York.)

Machine Politics

Machine Politics: Chicago Model.—By Harold F. Gosnell, Associate Professor of Political Science, University of Chicago. University of Chicago Press, Chicago, Ill., 1937. *xx* + 229 *pp.* $2.50 *from* THE AMERICAN CITY.

In this volume we see Chicago politics through a microscope, scientifically analyzed. The party machine and the characteristics of the party workers are closely examined by an author who has spent considerable time in and around the centers of activity as observer and participant. Voting-behavior in candidate and proposition elections is studied. The power of the press is weighed after ten years of careful perusal of political news. It is alleged that corruption pervades almost every aspect of local democratic politics and that even the hard years of the depression have done but little to change the ways of the old-line politicians, who are now enjoying the prospects of increasing prosperity. This volume is extremely readable and well worth the attention of any one interested in the trend of governmental practices.

Smoke Prevention

The annual report of the National Smoke Prevention Association is now available with its record of the 1937 convention proceedings. A great deal of new material on urban air pollution is presented, including 15 lectures on smoke abatement, fly-ash control, and dust prevention. Diagrams are given of a number of different kinds of apparatus used in measuring dust and cleaning air. For the first time a standard is set by which atmospheric pollution beyond a certain point may be judged a public nuisance. This 1937 report contains a considerable amount of research material of reference value to those interested in the control or prevention of urban atmospheric pollution. 257 pp. $2.00. (Apply to H. D. Blackwell, Educational Director of Smoke Prevention Assn., Lock Box 1048, Chicago, Ill.)

Theatre Bank Nights

"The Problem of Theatre Bank Nights" is a new publication by the American Municipal Association dealing with an activity which has become a nuisance to public officials during the past two years. In searching for means of regulation of these bank nights, or cash prize nights, in theatres, the question arises as to whether they constitute lotteries or violations of gambling laws. This publication is a résumé of the question from the legal viewpoint, and should be helpful to localities troubled with this practice. 11 pp. 50c. (Apply to the American Municipal Assn., Drexel Ave. and 58th St., Chicago, Ill.)

The Institute of Municipal Law Officers has added to the literature on "bank nights" with the publication of "Summary Legal Analysis and Check List of Materials on 'Bank Night' Schemes." As indicated in the title, this brief 5-page report summarizes the legal issues involved in regulating these schemes and provides a bibliography on the subject which should be of use to city attorneys in preparing opinions. 25c. (Apply to the Institute of Municipal Law Officers, 730 Jackson Pl., Washington, D. C.)

How to Drive

The fifth pamphlet in the "Sportsmanlike Driving Series," entitled "How to Drive," completes a text for a course in traffic safety and automobile operation. The five pamphlets are designed for use in high schools, and some states have already approved the series for state-wide use. With "How to Drive," an explanatory booklet entitled "Training New Drivers" is issued. All the suggestions presented in the series have been subjected to trial and have been found to be successful in teaching young and old to drive properly and safely. 99 pp. (Apply to the American Automobile Assn., Pennsylvania Ave. at 17th St., Washington, D. C.)

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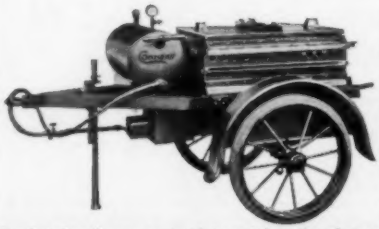

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Unicameral Legislatures

Unicameral Legislatures: The Eleventh Annual Debate Handbook.—Edited by Bower Aly, Assistant Professor of English, University of Missouri. Published by Lucas Brothers, Columbia, Mo., 1937. Vol. I, 220 pp.; Vol. II, 220 pp. $1.50.

This handbook contains a great deal of material necessary to the preparation of a thorough debate on unicameral legislatures. The first volume presents a number of analyses of the question, specifically prepared for the use of debaters, and Volume II is a collection of articles reprinted from various publications on the subject. A selected bibliography is included.

Provisional Appointments

The Provisional Appointment in City Civil Service Systems with Special Reference to the Philadelphia Civil Service.—By Frances L. Reinhold. University of Pennsylvania Press, Philadelphia, Pa., 1937. v + 130 pp. $1.50 *from* THE AMERICAN CITY.

The simple mechanism of misusing provisional appointments has long been employed by party machines to dominate the civil service. This volume points out the place of the provisional appointment in the merit system and then describes in detail the system of legal manipulation necessary for political domination. Statistical evidence and testimony is offered for Philadelphia in particular, and some comparative practices are described in other cities. The effects of provisional appointments on the various separate phases of civil service are elaborated, and, finally, suggestions for improvement in Philadelphia are suggested. The subject matter of this study has heretofore received astonishingly meager attention.

Committees in Organization

The Committee is perhaps our most widely used form of organization in government, in business, and in many other fields. Sometimes it is an extremely useful form, accomplishing much to the satisfaction of many, and at other times it halts progress and is simply a battleground for conflicting prejudices. A new article entitled "Committees in Organisation," by L. Urwick, has been recently reprinted from the *British Management Review*. It first deals with the characteristics of committee form and then with committees in action. By a careful analysis of committee functions in relation to these two aspects and based upon experience, Mr. Urwick provides a kind of guide by which various activities can be judged adaptable to a committee or not. 48 pp. and a chart. (Apply to Management Journals Ltd., Terminal House, 52 Grosvenor Gardens, London, S.W.1, England.)

Government Careers

Government as a career is almost a new concept in this country. But with the increasing importance of the government role in our economic life, we find an increasing number of persons with a genuine interest in public service. Still, there are many obstacles to a thoroughgoing career service in local government, and interested organizations are studying the methods of eliminating such difficulties. "A Career Service in Local Government" is a Committee Report of the International City Managers' Association which points out nine obstacles to career service and gives thirteen recommendations toward their elimination. 16 pp. (Apply to the International City Managers' Assn., 850 E. 58th St., Chicago, Ill.)

Races and Dwelling Types

"Rasse und Wohnung in der grossen Agglomeration," by R. Heiligenthal, is an interesting study, in German, of racial tendencies toward certain dwelling types. The old Aryan race has held pretty closely to the one- and two-family house except where industrial concentration has forced them into apartment living. In the port cities, one finds the greatest variety of dwelling types, because of the flow of immigrants with varying traditions. This study points out that although many other factors determine house styles, the influence of immigrant races should not be overlooked in any investigation of the matter. 91 pp. + 20 plates. 5.50 marks. (Apply to Carl Winter's Universitätsbuchhandlung, Heidelberg, Germany.)

Book of the States

The Book of the States, Volume II, Book One, 1937.—Published by the Council of State Governments, Drexel Ave. and 58th St., Chicago, Ill. 400 pp. $2.00.

This volume is the second step in the production of a periodical publication on state governments, the first having appeared in 1935. It is the only work of its kind available in the field. Divided into two parts, the first is a description of government organization and a progress report on the new governmental movement of interstate cooperation, and the second a complete reference manual on state government. The reference material includes a directory of administrative officials, containing lists of the men in the 48 states who carry on forty of the chief functions of state government, listed by function; a directory of legislatures, containing a roster of the 7,600 state legislators; and a 2-page directory for each state, presenting state facts and figures which should guide the inquisitive reader to further sources of information.

Water Purification

The Ohio Conference on Water Purification has issued its 16th Annual Report, containing a collection of interesting papers and discussions on various topics related to water purification. The paper voted the best by the Conference is entitled "Corrosive Action in Various Types of Water on Household Plumbing," by C. P. Hoover. A 15-year index is included in this 1936 Report. 101 pp. $1.00. (Apply to the Ohio Conference on Water Purification, Room 302, Depts. of State Bldg., Columbus, Ohio.)

Water Works School

The Nineteenth Annual Water Works Short School which assembled at College Station, Texas, February 15-20, 1937, has published its "Proceedings." There were 75 Texas cities represented and 5 representatives from outside states. A large portion of the time was spent in the preparation of a Manual designed to cover all phases of water-works operation, construction and maintenance for the guidance of the water-works fraternity of the state of Texas. Some papers included in the "Proceedings" are: "The Activities of a District Health Program"; "Status of Chemical Treatment of Sewage"; "Stream Pollution"; and "Control Tests and Records for a Small Sewage Treatment Plant." 111 pp. (Apply to Texas A. & M. College, College Station, Texas.)

Annexation of Territory

The League of Wisconsin Municipalities has just published "The Annexation of Territory by Wisconsin Cities and Villages." During the depression city boundaries remained largely static, but recent months have seen an increase in proposals for expansion. This publication is an outline of annexation procedure which should be of great assistance to city and village officials taking such a step. 6 pp. + set of 11 forms requisite to annexation procedure. (Apply to the League, Madison, Wis.)

Symbols for Maps and Charts

Presentation of data on maps and charts can serve to muddle or clarify a point to the observer. Clarity depends largely upon the effectiveness of the symbols employed in directing the attention to the significant factors. The National Resources Committee has been making a study of this technique in an attempt to reach some degree of standardization, the results of which are published under the title of "Suggested Symbols for Plans, Maps, and Charts," revised, April, 1937. The preliminary edition was accepted by the Federal Board of Surveys and Maps in January, 1936, for general circulation and use. This later edition should be a valuable guide to planning boards and others employing graphic presentation. (Apply to the National Resources Committee, North Interior Bldg., Washington, D. C.)

Water-Works Growth

"Achievements of Clarksburg Water Board, 1909 to 1937," is an interesting step-by-step description of the growth of a city's water works. The original plant was completed on April 8, 1889. In 1904 the plant and system was worth about $100,000, and today it is valued at $2,338,000, with a debt of only $59,000. 12 pp. (Apply to the Clarksburg Telegram, Clarksburg, West Va.)

Chlorine Compounds

Bulletin 132 of the Iowa Engineering Experiment Station, by David Charlton and Max Levine, is entitled "Germicidal Properties of Chlorine Compounds." Chlorine has become more and more widely used in the sterilization of water for drinking purposes and for the purification and odor control of sewage. Still, however, there is lack of agreement in regard to the germicidal powers of different chlorine compounds, mainly due to insufficient and faulty investigation of the subject. This is the first of a series of studies intended to establish a firmer knowledge of the use and properties of chlorine. 60 pp. (Apply to the Iowa Engineering Experiment Station, Iowa State College of Agriculture and Mechanic Arts, Ames, Iowa.)

Industrial Survey of New York

The third and final phase of the "Report to Hon. Frank J. Taylor, Comptroller of New York, on Industrial Survey of New York City" has appeared. The first two sections are records of the actual findings of the survey, and this final section contains seven suggestions based on these findings. It is hoped by the surveyors that officials will take the suggestions seriously, perfecting them and carrying them out for the sake of the industrial and business welfare of the city. 23 pp. (Apply to the City of New York Department of Finance, Municipal Building, New York.)

Housing and Health

An article entitled "Developing a Housing Program in a Southern City," by L. M. Graves, M.D., and Alfred H. Fletcher, F.A.P.H.A., has been reprinted from the July, 1937, issue of the *American Journal of Public Health*. The housing conditions of Memphis, Tenn., are analyzed, with special attention to the health aspects of bad housing and the consequent role of the health department in housing improvement. In the past, health departments have been too apt to dismiss the housing problem as primarily one of personal hygiene instead of recognizing the large public aspect of insanitary slum conditions. 10 pp. (Apply to the American Public Health Assn., 50 W. 50th St., New York.)

Tax Maps

The National Association of Assessing Officers has started publication of an "Assessment Practice Series," No. 1 of which is entitled "Construction and Use of Tax Maps." The tax map is considered indispensable equipment in the modern assessor's office, and for those who are just preparing them or revising them, this pamphlet should be a useful guide. Base maps and their development to finished tax maps are carefully considered, and the mechanics of the original survey are outlined. Finally, the maintenance of tax maps is discussed, and their cost is estimated. 51 pp. 50c. (Apply to the National Assn. of Assessing Officers, 850 E. 58th St., Chicago, Ill.)

Other Reports Received

ALBERTA, CANADA.—Proceedings of the Thirty-Third Annual Convention, Union of Alberta Municipalities, June 10 and 11, 1937. 95 pp.

CHICAGO, ILL.—Annual Report, Board of Supervising Engineers, Chicago Traction, fiscal year ended January 31, 1937. 138 pp.

CONCORD, N. H.—Annual Report, Board of Water Commissioners, 1936. 26 pp.

DUBUQUE, IOWA.—Annual Report, Water Department, 1936-1937. 60 pp.

FORT DODGE, IOWA.—"Urban Land Use." Iowa State Planning Board, 1936. 50 pp.

GRAND RAPIDS, MICH.—Annual Report, Treatment Works Division, Department of Public Service, 1936-1937. 33 pp.

LITTLE ROCK, ARK.—Report on Capitol Building and Grounds, Arkansas State Planning Board, 1937. 29 pp.

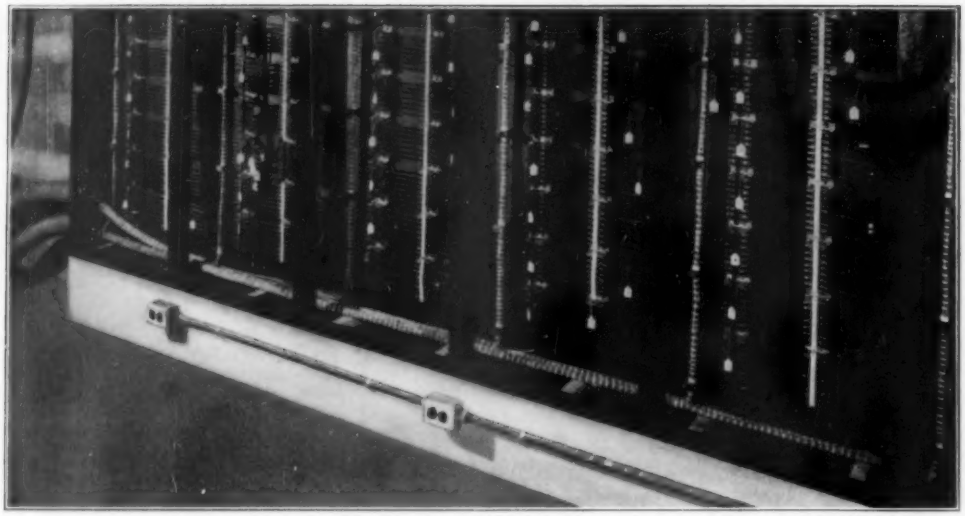
NEWARK, N. J.—Health Report, 1936. 45 pp.

NEW YORK, N. Y.—"Strengthening Civil Service," Civil Service Commission, 1936. 96 pp.

NEW YORK, N. Y.—"What the Health Department Nurse Does for You," Health Department. 20 pp.

NEW YORK, N. Y.—"Toward the End To Be Achieved," New York City Housing Authority. 19 pp.

PATERSON, N. J.—"Industrial Advantages of a Paterson Location," The Industrial Commission. 72 pp.



Lives depend on these LATOX Cables

Down underneath the water of Boston Harbor automobiles whiz along safely at thirty miles an hour. To insure the safety at all times of this traffic underneath Boston Harbor a great deal of the equipment must be controlled from a central point. Fans, pumps, lights, signalling devices, all must be instantly responsive if safety is to be continued.

In the tunnel, space for control cable conduits was costly, consequently, small diameter, dependable cables were of vital importance. The picture above shows two Simplex-LATOX insulated cables entering the cable terminal board at the Boston end of the tunnel. These cables, 259-conductors each, are only 1½" in diameter. If they had been insulated in the conventional way they would each be more than 3" in diameter.

Simplex-LATOX rubber insulation is designed to provide small diameter, low weight, moisture-proof cable for supervisory controls of utility substations, police and fire alarm systems, electric or steam railroad control and signal systems. For all these applications, Simplex-LATOX insulation combines the advantages of rubber and paper insulation for almost the small diameter and weight of paper insulation.

Simplex-LATOX is waterproof, permanent and retains indefinitely the qualities of high-grade rubber insulation. It is made directly from prevulcanized rubber latex having uniform physical and electrical characteristics.

A booklet describing this new insulation is ready for distribution. Return the coupon below and we will send you one gladly.

Simplex Wire & Cable Co., 79 Sidney St., Cambridge, Mass.

Simplex – LATOX

Light wall insulation made directly from rubber latex

Name_____

Company_____

Street_____

City and State_____

Conventions -- When and Where

(Figures in parentheses following the name of the convention city indicate the estimated attendance other than local)

Meeting is annual convention unless otherwise designated

OCTOBER 7-9.—ST. PAUL, MINN.
American Water Works Association—Minnesota Section. (St. Paul Hotel.) Sec.-Treas., Ronald M. Finch, 414 Flour Exchange, Minneapolis, Minn.

OCTOBER 10-12.—KANSAS CITY, MO.
Institute of Traffic Engineers. (Hotel President.) Sec.-Treas., Harold F. Hammond, 1 Park Ave., New York.

OCTOBER 10-15.—PHILADELPHIA, PA.
American Prison Association. Congress. (Hotel Bellevue-Stratford.) Gen. Sec., E. R. Cass, 135 E. 15th St., New York.

OCTOBER 11-16.—BALTIMORE, MD.
National Association of Public School Business Officials. (Lord Baltimore Hotel.) Sec., H. W. Cramblet, Board of Education, Pittsburgh, Pa.

OCTOBER 11-15.—KANSAS CITY, MO.
National Safety Council. Congress. M'ng Dir., W. H. Cameron, 20 N. Wacker Drive, Chicago, Ill.

OCTOBER 11-12.—SIOUX FALLS, S. DAK.
South Dakota Water and Sewage Works Conference. Sec., W. W. Towne, State Board of Health, Pierre, S. Dak.

OCTOBER 13-15.—CHICAGO, ILL.
American Municipal Association. (Blackstone Hotel.) Exec. Sec., Clifford W. Ham, 850 E. 58th St., Chicago, Ill.

OCTOBER 13-15.—ATLANTIC CITY, N. J. (200)
Pennsylvania Water Works Association. (Haddon Hall.) Sec., Dr. F. Herbert Snow, 327 Telegraph Bldg., Harrisburg, Pa.

OCTOBER 14-16.—MANHATTAN, KANS.
American Country Life Association. (Kansas State College.) Exec. Sec., Benson Y. Landis, 105 E. 22d St., New York.

OCTOBER 15-16.—ATLANTIC CITY, N. J.
American Water Works Association—New Jersey Section. Sec., P. S. Wilson, 325 Washington St., Glen Ridge, N. J.

OCTOBER 15-16.—ELMIRA, N. Y.
New York State Sewage Works Association. (Hotel Mark Twain.) Sec.-Treas., A. S. Bedell, State Department of Health, Albany, N. Y.

OCTOBER 18-21.—GALVESTON, TEXAS.
American Water Works Association—Southwest Section. (Galvez Hotel.) Sec.-Treas., Lewis A. Quigley, 3320 W. Berry St., Fort Worth, Texas.

OCTOBER 18-21.—NEW ORLEANS, LA.
International City Managers' Association. Exec. Dir., Clarence E. Ridley, 850 E. 58th St., Chicago, Ill.

OCTOBER 19-22.—OKLAHOMA CITY, OKLA.
International Association of Fire Chiefs. (New Municipal Auditorium.) Sec., James J. Mulcahey, 16 Franklin Ave., Yonkers, N. Y.

OCTOBER 19-20.—CINCINNATI, OHIO.
Ohio Conference on Sewage Treatment. (Netherland Plaza Hotel.) Sec., B. M. McDill, Dept. of Health, Columbus, Ohio.

OCTOBER 20-23.—SACRAMENTO, CALIF.
American Water Works Association—California Section. (Senator Hotel.) Sec.-Treas., Carl M. Hoskinson, Chief Engineer, Div. of Water, Sacramento, Calif.

OCTOBER 20-23.—NEW YORK. (200)
National Association of Assessing Officers. Exec. Dir., Carl H. Chatters, 850 E. 58th St., Chicago, Ill.

OCTOBER 21-22.—ST. PAUL, MINN.
Central States Sewage Works Association. (Lowry Hotel.) Sec.-Treas., Gus H. Radebaugh, Urbana, Ill.

OCTOBER 21-23.—LAKESIDE, MO. (100)
Missouri Water and Sewerage Conference. (Holiday House.) Sec.-Treas., Aug. G. Nolte, State Board of Health, Jefferson City, Mo.

OCTOBER 24-27.—BUFFALO, N. Y.
National Association of Commercial Organization Secretaries. (Hotel Statler.) Sec.-Treas., R. W. Nelson, Chamber of Commerce, Cincinnati, Ohio.

OCTOBER 25-27.—DODGE CITY, KANS.
League of Kansas Municipalities. (Lora Lock Hotel.) Exec. Sec., John G. Stutz, Lawrence, Kans.

OCTOBER 25-28.—BALTIMORE, MD. (600)
National Tax Association. (Lord Baltimore Hotel.) Secretary, W. G. Query, South Carolina Tax Commission, Columbia, S. C.

OCTOBER 27-29.—WHITE SULPHUR SPRINGS, W. VA.
American Institute of Steel Construction, Inc. (Greenbrier Hotel.) Sec., V. G. Iden, 200 Madison Ave., New York.

NOVEMBER 1-3.—DALLAS, TEXAS.
Texas Public Health Association. (Adolphus Hotel.) Sec., P. A. Kerby, State Board of Health, Austin, Texas.

NOVEMBER 4-6.—OMAHA, NEBR.
American Water Works Association—Missouri Valley Section. (Hotel Fontenelle.) Sec., Earl L. Waterman, Univ. of Iowa, Iowa City, Iowa.

NOVEMBER 4-6.—RICHMOND, VA.
American Water Works Association—Virginia Section. (Jefferson Hotel.) Sec., H. W. Snidow, 601 State Office Bldg., Richmond, Va.

NOVEMBER 4-6.—AMES, IOWA.
Joint meeting. Iowa Sewage Treatment Conference and Iowa Wastes Disposal Association. (Iowa State College.) Sec., Lindon J. Murphy, Iowa State College, Ames, Iowa.

NOVEMBER 4-5.—AUGUSTA, MAINE.
Maine Municipal Association. Exec. Sec., Roy H. Owsley, City Hall, Hallowell, Maine.

NOVEMBER 8-10.—GREEN BAY, WIS.
American Water Works Association—Wisconsin Section. (Hotel Northland.) Sec., L. A. Smith, City Hall, Madison, Wis.

NOVEMBER 15-17.—ENID, OKLA. (300)
Oklahoma Municipal League. Sec., Frank C. Higginbotham, Norman, Okla.

NOVEMBER 18-20.—ROCHESTER, N. Y.
National Association of Civic Secretaries. Sec., H. Marie Dermitt, Hotel William Penn, Pittsburgh, Pa.

NOVEMBER 18-20.—CLEVELAND, OHIO.
National Association of Housing Officials. (Statler Hotel.) Dir., Coleman Woodbury, 850 E. 58th St., Chicago, Ill.

NOVEMBER 18-20.—ROCHESTER, N. Y.
National Municipal League. (Seneca Hotel.) Sec., Howard P. Jones, 309 E. 34th St., New York.

NOVEMBER 18-19.—ATLANTIC CITY, N. J.
New Jersey State League of Municipalities. (Chelsea Hotel.) Exec. Sec., S. S. Kenworthy, 808 Trenton Trust Bldg., Trenton, N. J.

NOVEMBER 20.—ROCHESTER, N. Y.
Proportional Representation League. (Seneca Hotel.) Exec. Sec., George H. Hallett, Jr., 309 E. 34th St., New York.

NOVEMBER 30-DECEMBER 2.—WINNIPEG, MAN. (400)
Union of Manitoba Municipalities. Sec., John Spalding, Miniota, Man.

DECEMBER 1-3.—WASHINGTON, D. C. (300)
Highway Research Board of the National Research Council. (National Academy of Science.) Dir., Roy W. Crum, 2101 Constitution Ave., Washington, D. C.

DECEMBER 6, WEEK OF.—MEMPHIS, TENN.
The Asphalt Institute. M'ng Dir., J. E. Pennybacker, 801 Second Ave., New York.

DECEMBER 28-30.—ATLANTIC CITY, N. J.
Tax Policy League. (Chalfonte-Haddon Hall.) Exec. Sec., Dr. Mabel L. Walker, 309 E. 34th St., New York.

JANUARY 17-21, 1938.—CLEVELAND, OHIO.
American Road Builders' Association. Sec., Charles M. Upham, 952 National Press Bldg., Washington, D. C.

APRIL 24-29.—NEW ORLEANS, LA.
American Water Works Association. Sec., Harry E. Jordan, 29 West 39th St., New York.

Employment Provisions of the Emergency Relief Act of 1937

(From the address of Corrington Gill on September 17, other excerpts from which appear on page 5 of this issue)

THE employment provisions of the 1937 Act for project workers in the coming year are much the same as those which have been prevailing heretofore. Workers on a WPA project will continue to put in only the necessary number of hours to earn the stipulated "security wage" for their region, skills, and class of work; but the *rates* of pay are not to be less than the rates paid for work of a similar nature in the same locality. Persons in actual need are to be given preference in employment, regardless of previous relief status. The fact that a person has received either adjusted-service bonds or payment of an adjusted-compensation certificate is not considered in determining actual need of employment.

The general provisions in regard to disability or death compensation and benefits, as contained in the Act of February 15, 1934, remain substantially unchanged. However, the maximum monthly compensation rate is raised to $30, exclusive of medical costs, and authorization is given for the establishment of a special fund for the payment of such benefits in an amount to be determined by the United States Employees' Compensation Commission.

A few provisions of the 1937 Act, however, are different from those previously in force. The law now specifically provides that no relief person employed on a work project may be retained on that job if he refuses an offer of private employment, at work he is capable of doing, if the private employer offers equivalent wages and reasonable working conditions. The 1937 Act further encourages WPA workers to accept private employment, even if it be temporary, by the provision that any such worker shall be immediately reinstated under WPA if he loses his private job through no fault of his own and is still in need of relief. These statutory provisions, of course, are in essence merely congressional ratification of a policy we have been following since the creation of WPA.

The question of American citizenship is also taken into account under the WPA program. All the agencies cooperating in the works program are forbidden, as under the 1936 law, to employ knowingly any aliens illegally in this country, while a new restriction also forbids the employment of aliens who have not declared their intention of becoming citizens. Preference in WPA employment is given to full-fledged American citizens in need of relief, and, next, to aliens who took out their "first papers" before the 1937 Act was passed.

Veterans of the World War and the Spanish War are also given employment preference on WPA, according to the law.

HAZARD Armortite Cable offers many advantages for street or park lighting. Its non-metallic armor of hard vulcanized tape affords ample protection against abrasion and other mechanical damage. Impregnated wrappings make this cable waterproof. Because lead and metal sheaths are thus unnecessary, Armortite is light in weight, easier to handle and cheaper to lay, and is operated without excessive sheath losses, so common to steel-armored cables. Our booklet "Armored Underground Cable" is interesting to all City Engineers.

HAZARD INSULATED WIRE WORKS

Division of The Okonite Company
Works: Wilkes-Barre, Pennsylvania

Sales Offices:
New York Chicago Philadelphia Pittsburgh Buffalo Boston Detroit
Atlanta Seattle Dallas St. Louis San Francisco Los Angeles Washington

Do you mention THE AMERICAN CITY? Please do.

News and Illustrations

Items of Interest to City, Town and County Officials, and Others Concerned with the Economical Construction and Efficient Operation of Public Improvement Undertakings

New Snow-Plows for Light Trucks

A new improved line of snow-plows built to match the power output of 1-, 2- and 3-ton trucks, has been announced by the Austin-Western Road Machinery Co., Aurora, Ill. The manufacturer has carefully designed and fabricated these plows to obtain improved balance and greater strength, and the moldboards are curved to handle a maximum quantity of snow with a minimum expenditure of power. All excess weight has been avoided as an aid to truck operation and to permit quick and easy attaching and detaching.

THREE NEW AUSTIN-WESTERN SNOW-PLOWS

The line comprises nine models, of which there are three general types—the V-type, the taper-blade type, and the straight-blade type. The various types, of a given size, are interchangeable on the same underframe.

The plows are built with rubber-tired caster wheels, cast iron runners, safety spring releases, and means to adjust the pitch and plowing angle of the blades. New bulletins describing these plows have been issued and may be secured direct from Austin-Western by readers of this magazine on request.

A New and Smaller Time Switch for Traffic Control

R. W. Cramer & Co., Inc., 67 Irving Place, New York, has announced the Sauter Type SY time switch, which operates with a synchronous motor, on alternating current only, at 110 or 220 volts. The main switch is an ingenious double toggle action unit with a quick make and break and a self-locking mechanism. The switch mechanism is operated directly by the clock dial.

It is reported that this time switch requires a minimum of power to operate, resulting in practically no wear on the gear-train. The time movement is a special Sauter-built synchronous clock movement with a vernier 60-minute dial directly below and to the right of the 24-hour dial, which permits setting the 24-hour dial accurately to within 30 seconds. The motor is a slow-speed synchronous unit which is self-starting and which turns the 24-hour dial with its program setting levers through a rugged gear-train.

The whole unit is housed in a die-cast metal case finished in dull-grey enamel and with a dial inspection window. The unit is also equipped with a hand operating knob, which makes it convenient to manually open and close the contacts without interfering with the normal sequence of mechanical operation.

Inspection Service in Boston

Frank A. McInnes, consulting engineer, of Boston, who represented William R. Conard, of Burlington, N. J., on inspections and tests in the New England territory, died late in August. Mr. Conard has made arrangements for all communications to be relayed to Burlington from Boston by Mrs. S. M. Judge, Room 709, 6 Beacon Street, Boston, Mass., until arrangements are made for a resumption of office service.

Equipment for Testing Motor-Vehicle Safety

Motor-vehicle safety testing equipment, made by the Bear Manufacturing Co., Rock Island, Ill., includes testers for wheel alignment, headlights, brakes, tire-scuff, tools for straightening wheels, axles and frames, gages and small tools. These devices are of particular value in municipal compulsory inspection stations and in garages which service the 87,000 passenger cars, 8,000 motorcycles, and 150,000 trucks, buses and tractors owned and operated by municipalities.

METER FOR MEASURING HEADLIGHT OUTPUT

Meter Measures Headlight Output on Motor Trucks

The amount of light emitted by motor-vehicle headlights can be accurately measured by a light-output meter made by Guide Lamp Division of General Motors Corporation, Anderson, Ind. The meter is connected to the car battery in order to compensate for different battery voltages, and is tested by holding the open end of the output meter against the lens of a lighted headlamp and reading the value of light output. Many night accidents could be prevented if headlights were properly tested for their efficiency in this manner.

William Raisch Opens New York Office

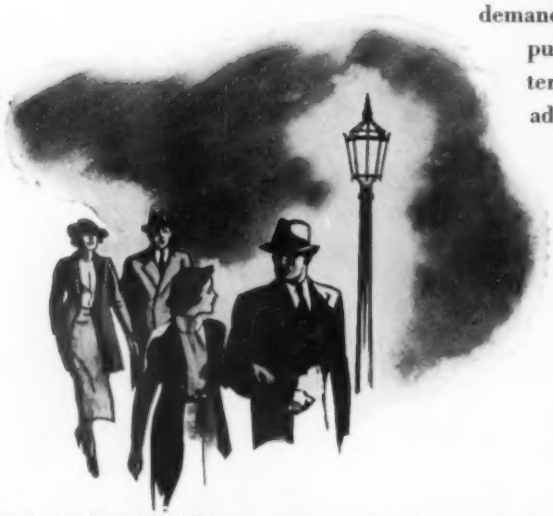
William Raisch, consulting engineer, specializing in sanitation, has announced the opening of his office at 227 Fulton Street, New York, on September 15.

BEAR HEADLIGHT TESTER

Combat Accidents, Crime, Fire, with this 4 point

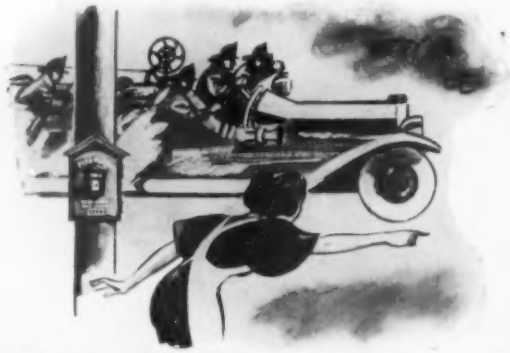
SAFETY PROGRAM

People are aroused by today's appalling losses of life and property due to *preventable* traffic accidents, crime and fire. They're demanding SAFETY!...Give them the protection of *adequate, modern* public safety equipment. Its cost is only a tiny fraction of the terrible costs it prevents . . . Graybar can help you with unbiased advice ... dependable equipment. Write us for full information.



1. Better Street Lighting ... Despite greatly reduced traffic, 40% of all accidents occur at night. Crime flourishes in the dark ... That's why better street lighting pays for itself. Call on Graybar's lighting specialists to help you with details ... choice of equipment.

2. Modern Traffic Control ... Meet perplexing traffic problems with *up-to-date* traffic control equipment. Saves time—helps prevent accidents. Steadily increasing *future* traffic must be considered. Why not let Graybar's experts offer suggestions?



3. Efficient Fire-Alarm Systems ... Tremendous advances in fire-alarm equipment have been made in recent years. A *complete,* interesting booklet describing present-day equipment is available to you. You'll want to have it. Write us—ask for it.

4. Police Radio ... More and more communities are turning to Police Radio to speed up the long arm of the law. Our experience is at your disposal—an experience based on helping scores of other cities solve their problems. Write for booklets—data.

GraybaR Electric Company

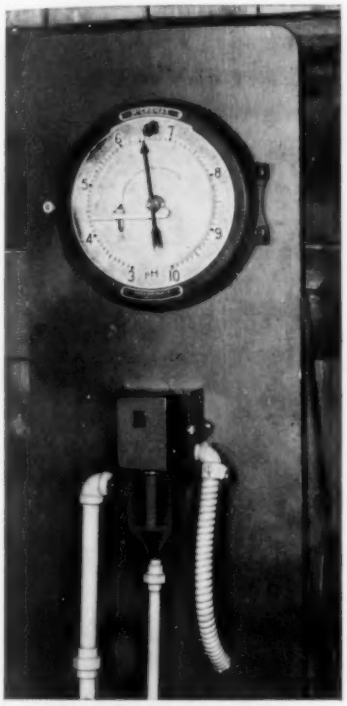
Distributed and guaranteed by GraybaR Electric Company

OFFICES IN 83 PRINCIPAL CITIES. EXECUTIVE OFFICES: GRAYBAR BUILDING, NEW YORK, N. Y.

During October we hope you will remember to mention THE AMERICAN CITY.

Automatic Recorder of pH in Water Works

Municipal filtration plants are improving the corrective treatment of water by the use of a simple, reliable means now available for automatically indicating and recording, or for indicating, recording and controlling, pH. With the indicating and recording equipment, operators can maintain the pH prescribed for proper coagulation or for preventing corrosion. Instead of basing treatment on intermittent grab samples, the operator has before him a continuous automatic index which shows at all times what the pH is, irrespective of color, turbidities or temperature.



A MICROMAX INSTALLATION FOR RECORDING pH IN A WATER WORKS

One of these Micromax recorders is installed in the Lakeside water purification plant at Springfield, Ill. The bold dial of the recorder has a large black pointer which automatically indicates the pH continuously. As the lime feed is adjusted to correct for under- or over-treatment, the pointer follows the resulting change in pH, indicating immediately when the adjustment is in line with the demand. A second record, identical with the first, provides this same convenient guide to the pH of water at the filters.

These dials can be read from across the room, making it as easy to check the pH immediately as it is to tell the time of day. To determine the pH trend of the limed or carbonated water during the past hour, day or week, the operator simply examines the red-ink record which each Micromax draws automatically on charts which can be filed for future study.

At other water purification plants, Micromax not only indicates and records pH, but automatically controls the addition of a reagent. In these plants the operator merely turns a control to the desired pH value. Thereafter the equipment operates continuously to maintain the pH at this point, a small deviation bringing about a small correcting action, and a large deviation bringing a correspondingly larger corrective adjustment. According to Leeds & Northrup Co., 4901 Stenton Avenue, Philadelphia, Pa., makers of Micromax, this equipment is also being used by numerous process industries. A 20-page illustrated bulletin, "To Improve Corrective Water Treatment," is now being issued and may be secured direct from Leeds & Northrup Co., without cost, merely by mentioning this magazine in your letter.

A NEW TRUCK USED FOR ROAD-SURFACING WORK

This new Mack, recently placed in service by Standard Oil of N. Y., Socony-Vacuum Oil Co., Inc., is employed in road-surfacing operations. Equipped with a tank which has a capacity of 1,450 gallons of asphalt, this truck distributes the hot asphalt through sprayers at the rear, which are operated by a separate engine

R. R. Davis Appointed Assistant General Advertising Manager of Westinghouse

S. D. Mahan, General Advertising Manager of Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa., has announced the appointment of R. R. Davis as his assistant.

Mr. Davis, who was formerly Apparatus Advertising Manager, has been associated with Westinghouse advertising activities since 1910. His present office is in East Pittsburgh, but he will be located in the new headquarters at Pittsburgh as soon as advertising offices can be established there.

Schaefer Joins Sales Department of Rensselaer

The appointment of Walter A. Schaefer to the Sales Department of Rensselaer Valve Co., 50 Church St., New York, has recently been announced by that company. Mr. Schaefer, who was formerly connected with Ernest L. Meyer, Inc., civil engineers, on the design and construction of sanitary engineering projects, and more recently an engineer in the Elizabeth Municipal Water Department, Elizabeth, N. J., takes the place of James E. Williamson, Jr., who recently resigned.

CLETRAC SIDEWALK SNOW-PLOW USED BY CITY OF NEGAUNEE, MICH.
Two Model E Cletracs rapidly cleaned the sidewalks of snow like this

Street Lighting

DESIGNED FOR THE DRIVER

BEFORE MODERNIZATION

AFTER MODERNIZATION

Inability of the *automobile driver* to see clearly and quickly contributes more to nighttime traffic fatalities than any other one cause. The *driver has to see* hazards in time to avoid accidents. That's why adequate street lighting should be the first concern of municipal authorities.

Safety crusades have proved effective in reducing daytime fatalities, but the number of traffic deaths has continued to mount because conditions beyond the control of the driver are too frequently responsible . . . conditions due to poor street lighting. Antiquated street lighting systems fail to provide proper conditions of visibility for drivers of modern low-built cars. Thus, safety efforts *must* include street lighting modernization!

As an answer to this demand for modern lighting and better visibility for the driver, a new technique in street lighting has been developed. This new technique provides brightness on the street surface so that every obstruction is silhouetted against the bright background of the pavement. Hence, the driver *CAN* see the danger in his path in time to avoid disaster.

An entirely new luminaire, the Westinghouse *Reflectolux*, has been designed to carry out the principles of this new technique. The *Reflectolux* provides the glareless illumination and surface brightness so vital to the reduction of nighttime traffic fatalities.

Ask your local Westinghouse Lighting Specialist for the new book, "SAFETY with Light", or address Westinghouse Electric & Mfg. Co., Edgewater Park, Cleveland, O.

Westinghouse Reflectolux, Sr. New pendant luminaire, adaptable both with respect to appearance and utilization, for any type of street lighting installation.

WHEN YOU THINK OF *Lighting* THINK OF

Westinghouse

APPLYING SOLVAY CALCIUM CHLORIDE TO A HIGHWAY FOR LOW-COST STABILIZATION

Non-Technical Booklet on Unpaved Roads

A well-illustrated non-technical booklet discussing methods of improving the wearing qualities and lowering the costs of maintenance and construction of unpaved roads with calcium chloride, has just been issued by the Solvay Sales Corporation, 40 Rector Street, New York. The book is written in easy-to-understand language and discusses in its various sections: the reduction in the loss of surfacing materials through stabilization; cutting, blading and dragging costs; principles of road-surface stabilization; partial or stage stabilization; stabilized base pavements; practical hints on maintenance; and the maintenance of road shoulders. This book may be secured without charge or obligation by highway engineers and municipal officials and others interested in low-cost roads, by writing direct to Solvay Sales Corporation, and mentioning THE AMERICAN CITY.

Mathieson Alkali Personnel Changes

Mathieson Alkali Works, Inc., 60 East 42nd Street, New York, has announced the appointment of Robert M. Mannheim as New England District Manager, with headquarters in the Hospital Trust Building, Providence, R. I. Mr. Mannheim has been a member of the Mathieson organization for the past six years and has covered the northern New Jersey territory until his recent appointment.

James R. Harrington, who has been covering the New York metropolitan area, will take over Mr. Mannheim's northern New Jersey territory, while Donald G. Ross will replace Mr. Harrington in the New York area.

Greater Production of Murphy Diesel Engines

The large production of heavy-duty diesel engines manufactured by Murphy Diesel Engine Co., Ltd., So. 53rd and West Burnham Streets, Milwaukee, Wis., has necessitated an increase in employment in all departments of the company as well as appointments of executive officers. R. A. McClevey, who has been appointed Vice-President and General Manager of the company, was associated for a number of years with the Northern Illinois Coal Trade Association as Secretary.

Murphy diesel engines are carefully designed to meet all requirements in the industrial power field and are now available in 50 to 175 hp. Installations of diesel engines are being made in a great many industries requiring either portable, semi-portable or stationary power.

New Book on Swimming Pools

The Josam Manufacturing Co., Empire Building, Cleveland, Ohio, manufacturer and designer of swimming pool equipment for over twenty years, has recently published a 48-page book, "An Elementary Treatise on the Construction, Sanitation and Operation of Swimming Pools," by Louis J. Day and C. W. Stedman.

This publication contains clear and authoritative basic information and technical data, including layouts and plans on all types of swimming pools, construction, pool water supply, transmission and infection, water purification, operation, salt-water pools, pools for special purposes, and ornamental and garden pools.

Interested public officials and commercial pool operators may obtain, gratis, a copy of this book which sells for $1.00, by writing direct to the company on an official letterhead, and mentioning this item.

New Street-Lighting Luminaires

The Reflectolux Senior is an ornamental luminaire embodying the same light control features as the other units of the Reflectolux line of the Westinghouse Electric and Manufacturing Co. It is designed for 300-500-watt lamps on multiple circuits, or 4,000-15,000-lumen lamps on series circuits. Units for symmetric or asymmetric light distribution are available.

The canopy is of cast iron with a hexagonal top section tapped for 1¼-inch pipe. The case is spun from heavy-gage copper sheet. The body is a cast-aluminum housing that encloses the reflector. The globe holder, of cast-aluminum and engaging in the half-hinge of the body, has a heavy weatherproof felt gasket. A large Rectilinear globe (new shape) is available in either clear or light alabaster. The reflector is spun from Alclad aluminum sheet and treated by the Alzak process. A pendant adjuster is available for those installations where units must be leveled to compensate for pole rake or similar misalignments.

THE DETROIT ROTARY BROOM AND INTERNATIONAL TRACTOR ARE USED BY THE PARKS DEPARTMENT, BINGHAMTON, N. Y., FOR CLEARING SNOW FROM SIDEWALKS AND CLEARING ICE SKATING RINKS

MORE LIGHT * LESS GLARE * LOWER COST

With Deep Hood and Cast Aluminum Ornaments

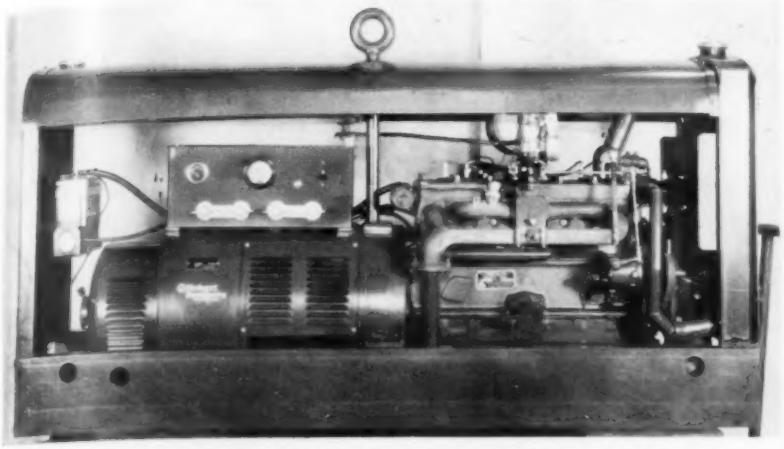
WITH THE L-M SPHEROLITE IN 5 DISTINCT DESIGNS

With Short Hood
With Porcelain Hangolite Head for Suspension Mounting
With Porcelain Hangolite Head for Bracket Mounting
With Porcelain Metrolite Head for Suspension Mounting
Above Spherolite Combinations Available With L-M Diamond Mesh Glass Globe or One-Piece Holophane Refractor

You get more light on the street with the L-M SPHEROLITE Luminaire... it makes full use of every lumen. Its deep, curved reflector bends up-cast light down to the street. Its reflecting surface, of either Alzak or Rhodium, provides accurate re-direction of light and insures effective distribution of light on the street. And by completely concealing the light source, the SPHEROLITE reduces glare to a minimum.

You save with the SPHEROLITE because it is easy to install, and is fully protected against dust and insects, and because its glassware can be easily replaced in the field. The SPHEROLITE is available with either self-cleaning L-M Diamond Mesh Diffusion Globes or one-piece Holophane Refractors. See the full description in the new SPHEROLITE BULLETIN, LMB 3721. Write to South Milwaukee, Wisconsin, for your copy.

LINE MATERIAL CO.



THE HOBART ELECTRIC GENERATOR UNIT FOR PIPE THAWING

An Electric Pipe Thawer

The Hobart electric pipe thawer for thawing frozen water pipe is a rugged outfit built for speedy, convenient and low-cost operation. It follows closely the design and construction of the Hobart gasoline-engine-driven welder, but is an entirely different piece of equipment. The generator of the thawer is of special design, delivering alternating current at safe voltage for pipe thawing. Two thawing ranges are provided—one of 500 amperes for thawing house service pipe and small mains, and one of 1,000 amperes for larger pipes, if required.

This outfit is powered by a Model DU Chrysler industrial engine. An electric self-starter is provided to avoid the danger and costly delays incident to hand cranking, particularly in cold weather. A trailer chassis on which this thawer can be mounted for easy portability is also available, or the unit may be mounted on one of the regular service trucks.

Complete details on this pipe thawing unit, as well as valuable information on the subject of pipe thawing, are contained in a 23-page booklet, "Hobart Pipe Thawing Manual," which may be secured direct from Hobart Bros. Co., Troy, Ohio.

Portable Traffic Signals

A portable traffic signal, made by the Lewis Manufacturing Co., Decatur, Ill., is designed for use at temporarily congested intersections, particularly school crossings. It is not intended to take the place of regular traffic signals, but is made easily portable so that it can be transported from one intersection to another as the need arises. The light was first installed at school crossings in Decatur, and it is reported by officers that children are most observant of them.

Complete, the unit weighs 42 pounds, is 27 inches high and is equipped with 12 lenses, red, green and amber on each side, and also with visors of die cast aluminum alloy. It has a 3-circuit controller for solid amber, overlapping both red and green, and a 4-circuit for split amber overlapping the green only. The controller, which can be mounted in a body or on a pole at the sidewalk if desired, is timed for 15 and 20 seconds but is adjustable 50 per cent either way.

Details and information regarding these portable traffic signs can be secured by writing direct to William Appleby, Eastern District Office, Lewis Mfg. Co., 109 Crosby St., New York.

Rotary Distributors for Sewage Treatment

The American motor-driven rotary sewage distributor, made by the American Well Works, Aurora, Ill., is a two-arm rotary-type machine with diametrically opposed arms suspended from a stationary center pedestal or column by a bowstring truss. Sewage is distributed by orifices along the bottom of the arm. These orifices are adjustable as to size, and discharge onto a continuous splash plate which distributes a sheet of sewage onto the bed from end to end of the arms. The center rotating drum forms part of the truss and is rotated and suspended on bearings by a stationary center column which carries the totally enclosed motorized reducer. This reducer, powered by a cable running along the feed line and then up through the stationary column to the motor, drives the rotating drum by means of an over-running friction clutch.

The distributor is rotated at constant speeds to give a tangential velocity of approximately 6 feet per second at the ends of the arms. Power is furnished by a totally enclosed type motor with special cotton-covered windings and moisture-proof impregnation.

Caterpillar Personnel Changes

Three changes in the sales department of the Caterpillar Tractor Co., Peoria, Ill., have been announced recently. Paul Weeks, who was Manager of the Washington, D. C., office until his transfer to the Peoria office about two years ago, has returned to his former post in the Capital, relieving E. B. English, who will become Manager of Federal and States Sales, with headquarters at Peoria.

H. H. Howard, who has been with the company since 1926 in export and domestic sales, has been appointed Manager of the Engine Sales Division.

Stopping Main Leaks with Bell Joint Clamps

Originally designed to permanently stop leaks in the joints of old cast iron gas mains, the Carson bell joint clamp has been used, in recent years, for similar service in the water-works field. It actually converts lead-calked bell joints into efficient mechanical joints capable of standing much higher pressures.

Carson clamps consist of a series of jointed castings which are adjustable to fit variations in the outside bell circumference, adjustable to compress the gasket uniformly regardless of variations in the bell face, and adjustable to make a snug fit around the spigot regardless of variations in diameter. These clamps are made in sizes from 4 inches to 48 inches inclusive. They are described in detail in the literature of the Carson-Cadillac Corporation, 1201 Pinson Street, Birmingham, Ala.

NEW REFUSE-COLLECTION TRUCK FOR PHILADELPHIA, PA.

A new Model 8 R.H. Colecto sanitary refuse-collection truck which has recently been purchased by the city of Philadelphia from the Municipal Sanitation Corporation, Bridgeport, Conn.

STREET SCENE...

at NIGHT—*in a* MODEL AMERICAN CITY

Above: Holophane Refractor No. 4177

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Outdoor Lighting

A Section of THE AMERICAN CITY
Devoted to the Lighting of Streets, Highways, Bridges, Airports, Athletic Fields and Parks, and the Floodlighting of Public Buildings

Single-Duct Lighting Circuit in a Town of 2,900

Laid Under Concrete Pavement without Concrete Around Duct

By NORMAN J. SCHADLER
Superintendent of Distribution, Borough of Kutztown, Pa.

WHEN Kutztown, population 2,900, widened Main Street and laid a 10-inch concrete pavement, the old armored cable was replaced by a single-duct system comprising 14,000 feet of 2-inch Johns-Manville Transite conduit installed without concrete envelope.

This conduit, delivered without any breakage, was placed 12 inches below the road slab and 6 inches outside the curb line. Lighting standards were set 200 to 350 feet apart, and in one instance 400 feet. No manholes were provided.

The cable was carried into the base of each standard by means of two bends. A bend of 18-inch radius and 45 degrees brought the duct horizontally within the curb line, while an 18-inch-radius 90-degree bend brought the duct vertically into the lighting standard. The duct was backfilled with fine materials free of all jagged stones, and tamped.

No difficulty was experienced in fishing the lead-covered series-lighting wires from standard to standard.

The installation has worked out very advantageously to the borough. A few grounds occurred recently, and there was no difficulty in removing the cable and replacing it after repairs were made. We think it a wonderful job, and it is permanent.

TRANSITE CONDUIT FOR SERIES LIGHTING CIRCUITS INSTALLED 12 INCHES UNDER CONCRETE ROAD SLAB

Left—simple connection for lighting standard; right—a 400-foot run

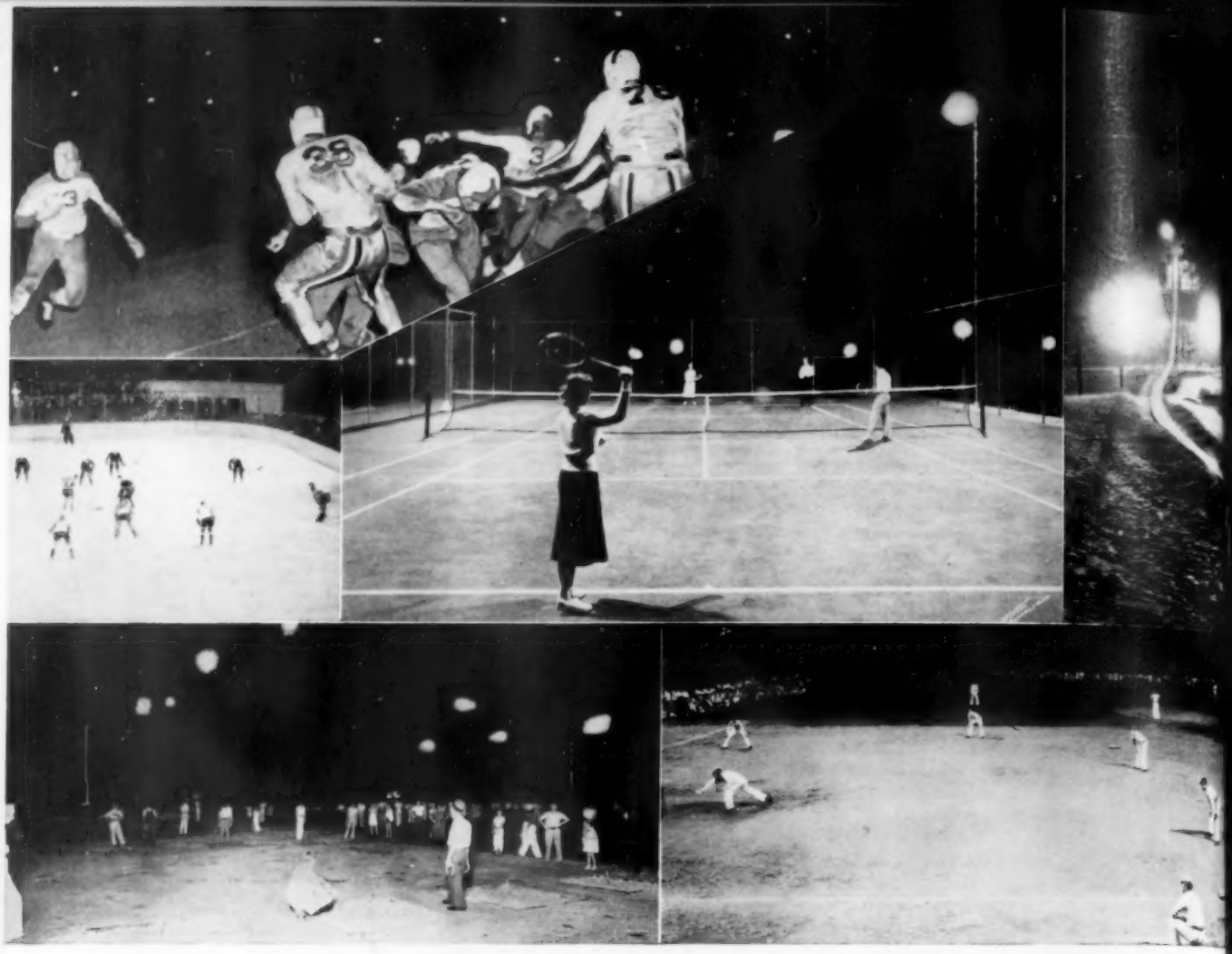
Mercury-Incandescent Used in Street Lighting

By C. W. BURDICK
Superintendent, Municipal Water and Light Department, Grand Island, Nebraska

GRAND ISLAND, third largest city in Nebraska, has the largest mercury-incandescent street-lighting system in the United States today. This superseded last November a system of incandescent lamps in 5-light clusters, which had been in existence for 23 years.

Our 178 luminaires are spaced 6 to a block, opposite, and are mounted on extension poles to the old poles, bringing each unit up to a 17-foot light center. Each luminaire contains a 400-watt mercury lamp producing 16,000 lumens, and a 200-watt incandescent producing 3,400 lumens. The combination gives 29 lumens per watt.

The mercury lamp is mounted base down. Above it the incandescent is mounted with its reflector base upward. When the current is turned on, the mercury lamp at first glows with a relatively weak and decidedly greenish-blue light;



PLAN Your Floodlighting to Increase Public Pleasure

SKATING, tobogganing, swimming, tennis, soft ball—all these sports and many others can be enjoyed by more of the citizens in your community during 1938 if you include an adequate floodlighting program in your new budget.

Voters *do* appreciate civic improvements made for their safety and pleasure. Floodlighting for night sports has been placed in successful operation in hundreds of cities. A few of the outstanding municipal installations are at Alcyon Field, Pitman, N. J.; Olean Stadium, Olean, N. Y.; Merrill Municipal Field, Merrill, Wis.; Municipal Field, Wisconsin Rapids, Wis.; Hyde Park Stadium, Niagara Falls, N. Y.; Municipal Field, Peru, Ill. Thousands of people in these cities every year enjoy a program of healthful recreation each evening—recreation which would otherwise be impossible.

Voters also appreciate economy, and the G-E suggestion of planned floodlighting will allow you to provide an adequate installation at the lowest possible cost. A definite plan provides for lighting different areas in order of their importance. It results in the most efficient utilization of the floodlighting projectors, often making the same units available for more than one sport. For further information concerning planned floodlighting, write General Electric, Schenectady, N. Y.

GENERAL ELECTRIC

500-259

it is then operating at 20 volts and 5 amperes, as a low-intensity, low-pressure arc. Over several minutes, pressure is built up by heat, and the light output becomes more intense and whitish. When stable operation is attained, it is at 155 volts. The light then is concentrated into a brilliant pencil-like beam extending the length of the mercury bulb. These units were developed by the General Electric and General Electric Vapor Lamp Companies.

Both the mercury and the incandescent lamps are turned on in the 178 units at dusk; but at midnight the mercury lamps are turned off and the incandescents are left burning. This is accomplished by use of a 3-wire circuit. The single 200-watt incandescent lamp used in connection with the Alzak reflector in each unit gives more illumination on the street after midnight than the old 5-light electrolier with all lights burning.

The mercury lamp in our units when used by itself is an efficient producer of bright, slightly bluish-green, white light. Addition of the incandescent lamp within the fixture contributes a certain amount of yellowish and reddish light, thus improving the color.

The new system of lighting was dedicated November 11, 1936, with ceremonies sponsored by the Chamber of Commerce, the American Legion, and other organizations.

Our local people are exceedingly proud of their new lighting system, and comments are constantly heard from visitors on the high intensity of light on our streets. Its brilliance is outstanding and cannot escape the eye of the most casual visitor. The Chamber of Commerce is repeatedly receiving favorable comment from within and without the city. The police department also reports a very decided decrease in traffic accidents and petty thievery.

We have not had one adverse comment on this new lighting. On the other hand, there have been many requests for its extension along other thoroughfares. Grand Island merchants are rejoicing at the increase of sales to visitors attracted by our brilliantly illuminated business district.

The system was designed and installed by the City Municipal Lighting Department. Current is furnished by the municipal power plant.

Light vs. Accidents

Studies by R. E. Simpson, of the National Bureau of Casualty and Surety Underwriters, show:

Quality of City Street Lighting Lumens per Linear Foot	Ratio of Night Fatalities to Day Fatalities
80 or more.....	8 to 1
40 to 80.....	12 to 1
25 to 40.....	21 to 1
Less than 25.....	47 to 1

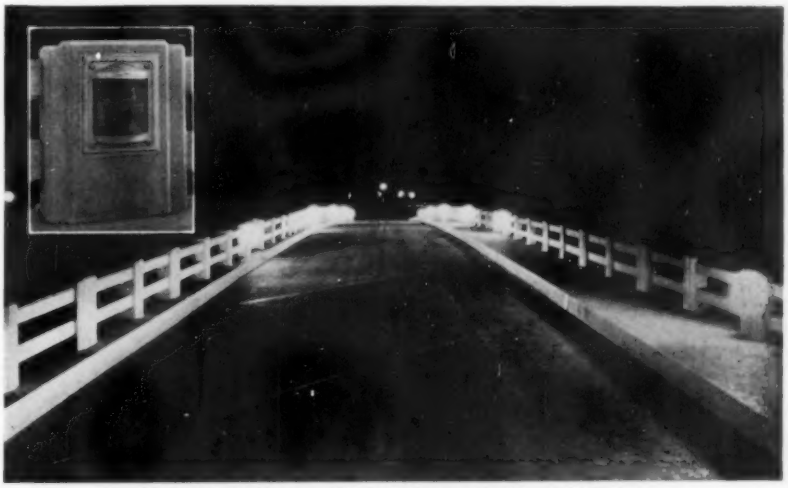
Built-in Bridge Lighting

THERE are now approximately five installations of built-in bridge lighting in the United States, two of which are located in Cincinnati. The oldest was installed about fifteen years ago at Kensico Dam, N. Y.

The distraction with this type of lighting due to glare and shadow effects is apparently responsible for an increased accident hazard. In each of the local installations it was necessary to reduce the wattage so materially to bring the glare down anywhere near tolerable limits, that the resultant road brightness is entirely inadequate even when the surface is dry. Parking is banned on each of the viaducts, but in an accident not long ago, when one motorist had been forced to stop to change a tire, a total of four other machines became independently involved in a sufficiently serious manner to result in several injuries and considerable property damage.

The local installations frequently draw public criticism, and even the administrative officials who are responsible for the installations have found them too costly to operate on a satisfactory basis for any appreciable volume of traffic.

Paul H. Goodell,
Managing Engineer, General Illumination Engineering Co., Cincinnati, Ohio.



RECENT INSTALLATION OF BUILT-IN BRIDGE LIGHTING

"Built-in lights of the type shown here have been installed on a viaduct on Bankhead Highway leading into Anniston, Ala. The structure, 30 feet wide by 466 feet long, is satisfactorily lighted by 14 150-watt, 2,500-lumen lamps set into the guard-rail columns. Similar installations are being made at Evergreen, Ala., on U. S. 31, and on a new curved superelevated bridge."—H. H. Hauk, Chief Engineer, Highway Department, Montgomery, Ala.

Cleveland Wants Safer Streets at Night

AN analysis of tabulating card records has shown that on a number of the Cleveland, Ohio, thoroughfares or portions of thoroughfares there is an abnormal concentration of night accidents. Lack of adequate visibility is undoubtedly the greatest factor in this.

In order to obtain further evidence of the part played by inadequate visibility, the Subcommittee on Lighting, Traffic Signals and Signs of the Cleveland Safety Council has undertaken field studies of obstacle visibility and pavement brightness. These measurements show a rather direct relationship between the night accident rate and the illumination effectiveness. From the data obtained thus far it appears possible to condense the testing program by taking readings of pavement brightness only. This will cut to perhaps one-quarter the time required for the readings. It is our recommendation that such field data be obtained wherever there is any question as to whether an abnormal night accident rate is attributable to inadequate illumination.

From the accident analyses it is apparent that there are a number of places where improved thoroughfare lighting would be expected to reduce accidents materially. These thoroughfares should have improved lighting. By the use of higher mountings and modern pendent equipment it is possible without increase in lamp size to double or in some cases triple the amount of light on the street as compared with that now provided with the so-called Cleveland lanterns.

It will not be possible in most cases to extend the height of the present standards and equip them with brackets, because of the stress incident to the greater height and to the leverage exerted by the bracket. The concrete pole bases, however, can be utilized with new poles.

Kirk M. Reid,
Chairman, Subcommittee on Lighting, Traffic Signals and Signs, Cleveland, Ohio.

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